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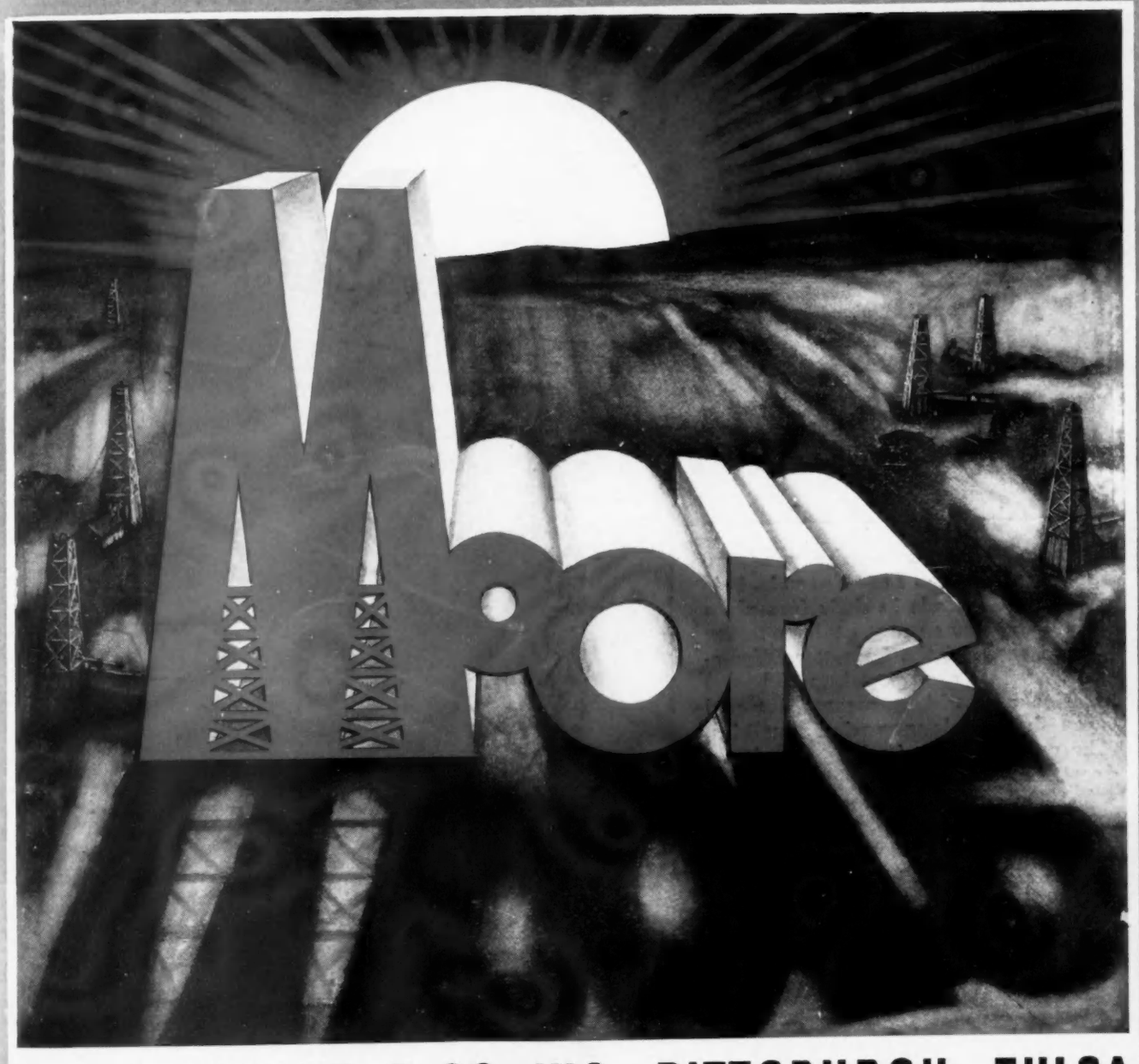
THE OIL WEEKLY

OIL & GAS ENGINEERING

News Statistics



LEE C. MOORE & CO. INC., PITTSBURGH, TULSA

December 4, 1931

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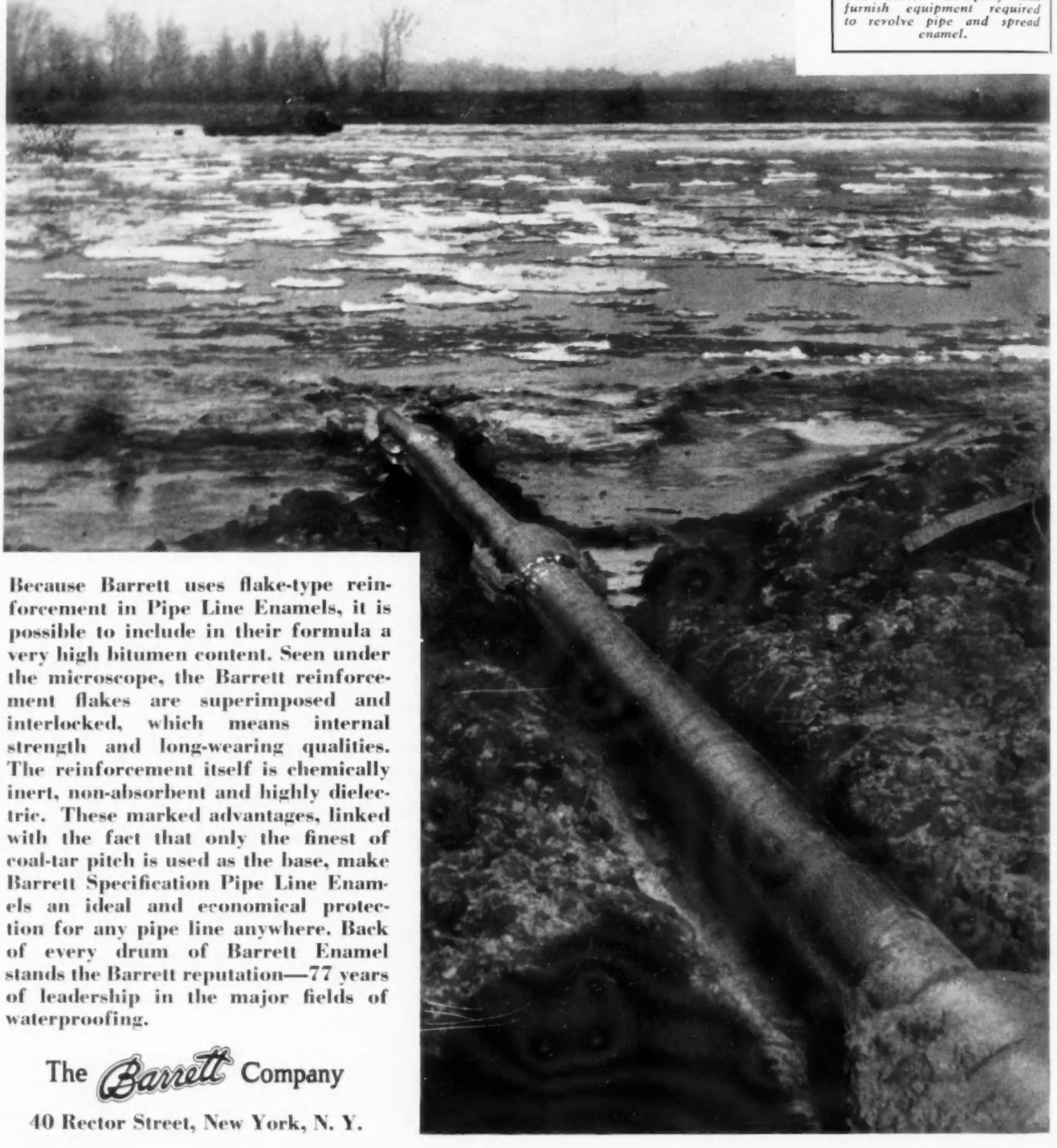
EDITORIAL INDEX, PAGE 11

Greater bitumen content means greater protection and longer life for pipe lines

Barrett Specification PIPE LINE ENAMELS

Photo-micrograph shows how flakes of internal reinforcement used by Barrett tend to interlock. They laminate with waterproofing agent and give Barrett Pipe Line Enamels unusual tensile strength and toughness.

For pipe of large diameter The Barrett Company will furnish equipment required to revolve pipe and spread enamel.



Because Barrett uses flake-type reinforcement in Pipe Line Enamels, it is possible to include in their formula a very high bitumen content. Seen under the microscope, the Barrett reinforcement flakes are superimposed and interlocked, which means internal strength and long-wearing qualities. The reinforcement itself is chemically inert, non-absorbent and highly dielectric. These marked advantages, linked with the fact that only the finest of coal-tar pitch is used as the base, make Barrett Specification Pipe Line Enamels an ideal and economical protection for any pipe line anywhere. Back of every drum of Barrett Enamel stands the Barrett reputation—77 years of leadership in the major fields of waterproofing.

The Barrett Company

40 Rector Street, New York, N. Y.

The OIL WEEKLY. Issued weekly by the Gulf Publishing Co., 3301 Buffalo Drive, Houston, Texas. Subscription price $1.00 per year; 15 cents per copy. Entered as second-class mail matter December 23, 1916, at the post office at Houston, Texas, under act of March 3, 1879.

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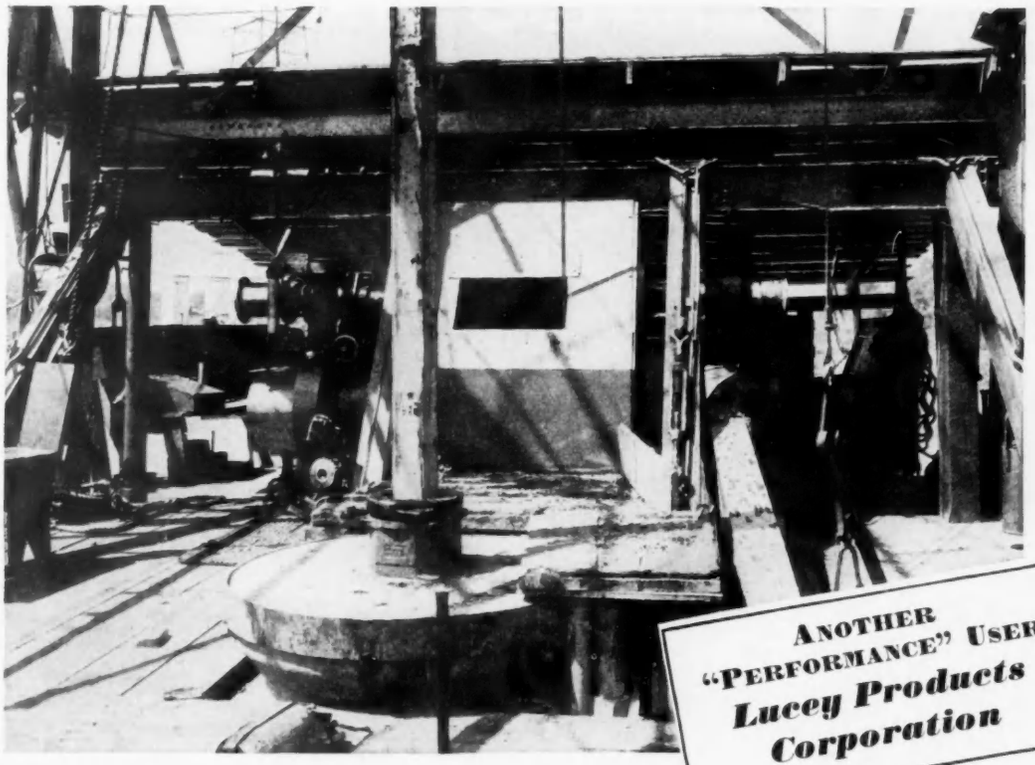

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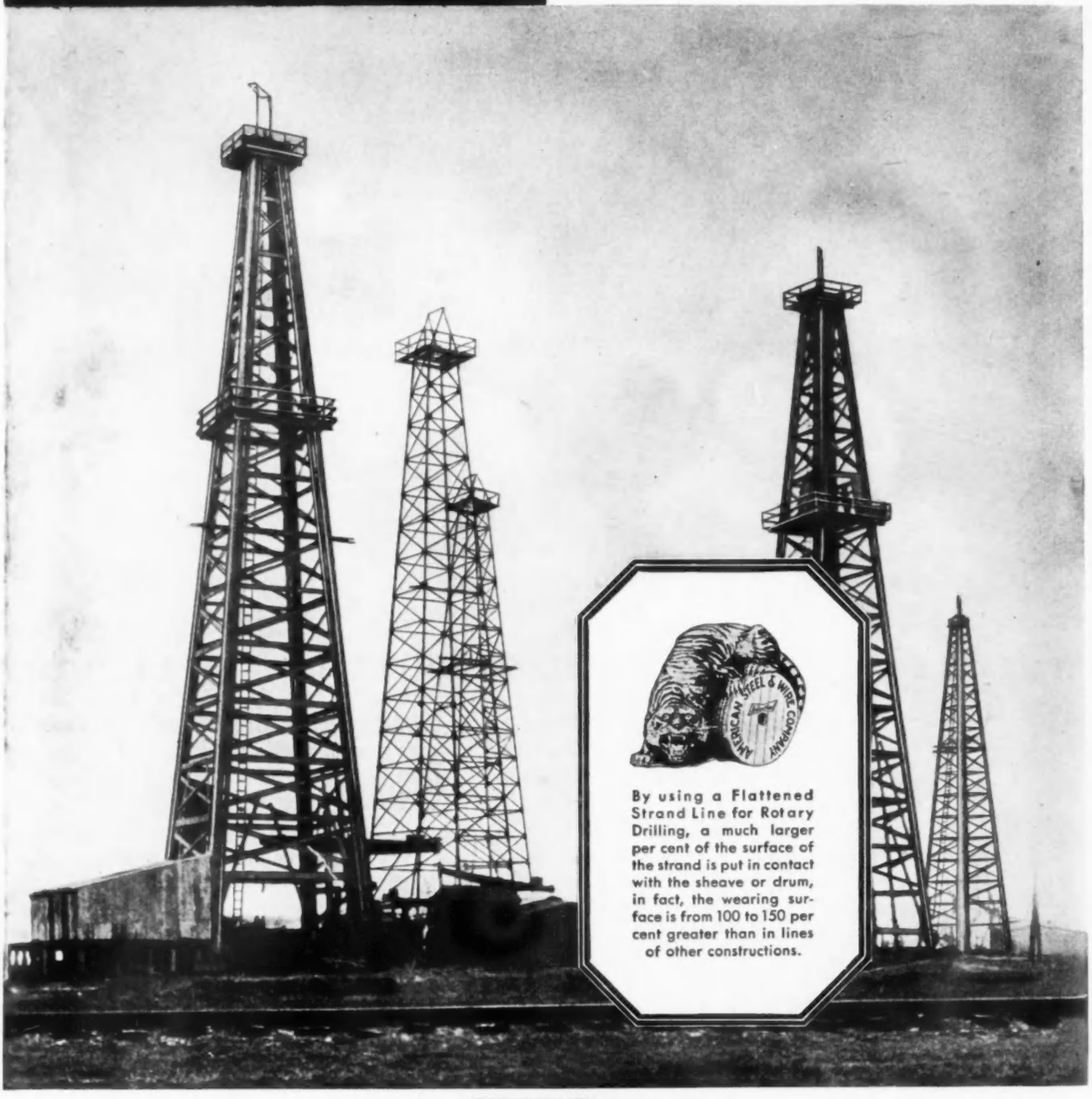
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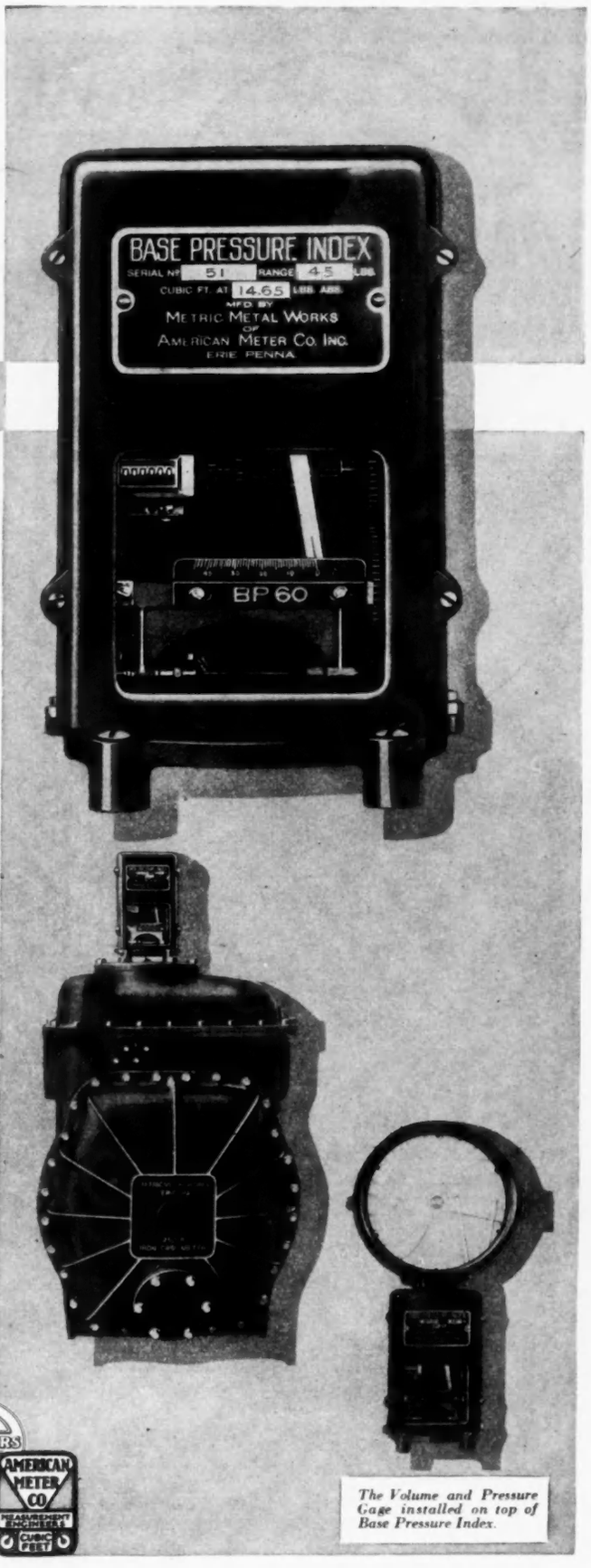

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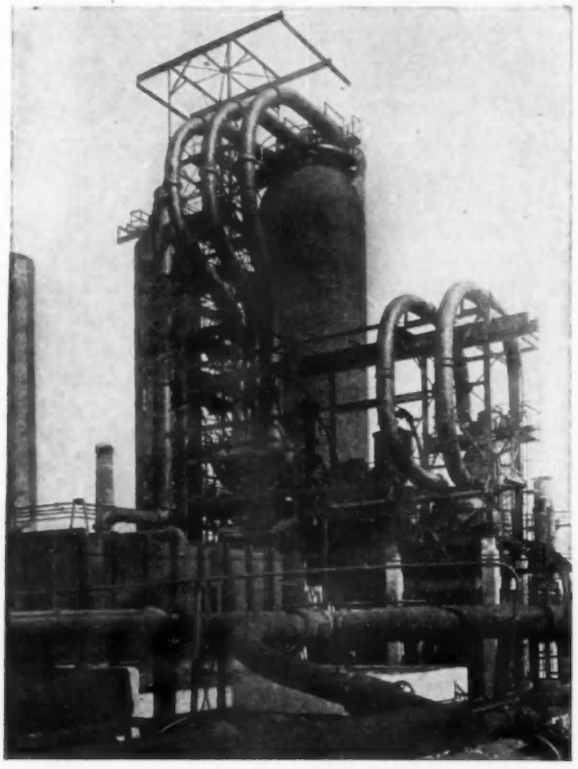

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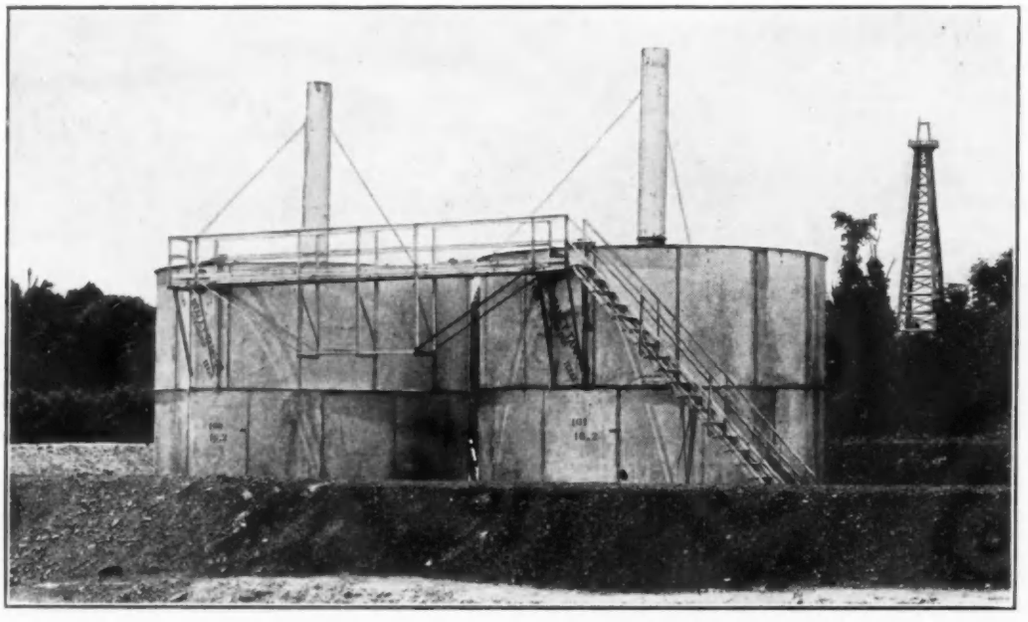

(At left) Two 1,000-Bbl. Maloneys on the Golding-Murchison Oil Co.'s Deason Lease, Tunnertown, Texas. Erected by S. S. Staley Tank Co., Distributer, Tyler, Texas.

MADE OF KEYSTONE AMERICAN

MALONEY

THE OIL WEEKLY

December 4, 1931
Vol. 63, No. 12

S. W. ROBINSON
Editor

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THE GULF PUBLISHING COMPANY
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VOLUME 63, NO. 12 DECEMBER 4, 1931

THE OIL WEEKLY

SPECIALIZED TO OIL AND GAS PRODUCTION
AND PIPE LINE DIVISIONS

ENGINEERING • NEWS • STATISTICS

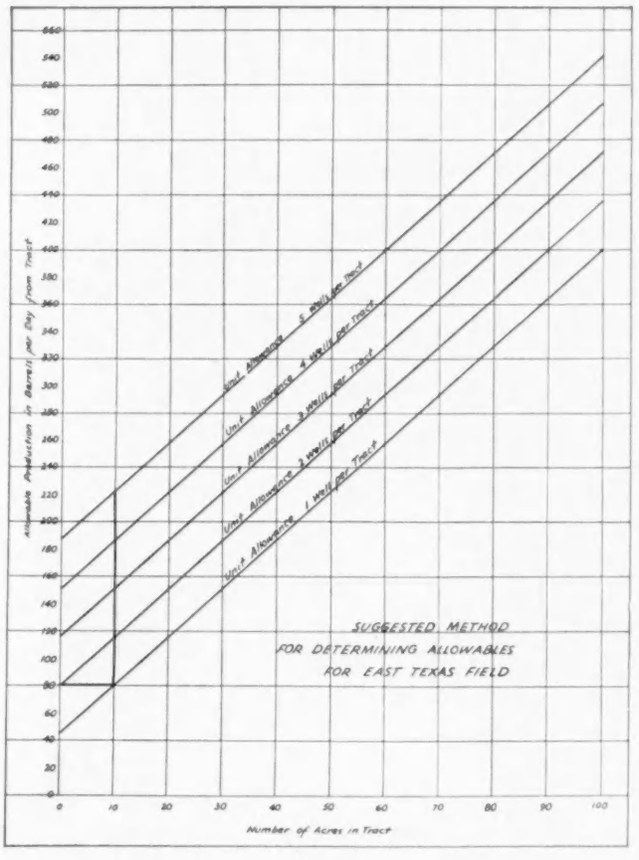
The Changing Panorama

Nothing new was published during the week about the anti-trust ouster suit in Texas. But from Austin where things political are watched with keen interest comes the observation that if, as some are prone to say, the suit was for political effect, Attorney General Allred has miscalculated. There has not been the wave of high acclaim that might have been expected from the citizenship. On the other hand there have been expressions of disapproval. Civic bodies can see no improvement for the community by disrupting employment of thousands of citizens during ouster proceedings, changes of management or whatever the success of the suit would mean. There are other thousands of citizens, land owners and others, who are satisfied with their business relations with the companies accused. It has also been pointed out that it will be an expensive procedure and that even should the prosecution be successful, the state will lose. And again the average citizen who buys gasoline is not easily sold on the idea that there is not competition in the oil business when he can see so much of it.

East Texas Proration Basis

Among the newer plans for determining allowable production in the East Texas field is one that is based on the size of the tract and the number of wells on tract. This plan suggests an allowable ranging from 80 barrels for one well on a ten-acre tract to 400 barrels for one well on a 100-acre tract and an additional 35½ barrels for each additional well. The plan also suggests the establishment of a court of equity under the military with a judge advocate to set up rules and allowances to govern "hot spots" or areas that include a lot of small and closely drilled tracts.

Governor Ross Sterling has advised THE OIL WEEKLY that there will be no change at the present time in the method of determining East Texas allowables and announced effective December 2 a reduced allowable from 125 barrels per well to 110 barrels, which was later rescinded. Page 47


Allowable Production in Barrels per Day from Tract
Number of Acres in Tract
Unit Allowance 4 wells per Tract
Unit Allowance 3 wells per Tract
Unit Allowance 2 wells per Tract
Unit Allowance 1 well per Tract
SUGGESTED METHOD
FOR DETERMINING ALLOWABLES
FOR EAST TEXAS FIELD

Suggested Method for Determining Allowables for East Texas Field

Following are allowable productions in barrels per day for different size tracts with various numbers of wells per tract as taken from the curves on above chart for determining the allowables for the East Texas field. Allowables are given for the nearest even barrel.

	Acres in tract									
Wells	10	20	30	40	50	60	70	80	90	100
1	80	116	151	187	222	258	293	329	364	400
2	116	151	187	222	258	293	329	364	400	436
3	151	187	222	258	293	329	364	400	436	471
4	187	222	258	293	329	364	400	436	471	507
5	222	258	293	329	364	400	436	471	507	542

The tariff on oil is certain to come up during the session of congress that is about to begin. Along with it is now proposed legislation permitting, encouraging or otherwise arranging an "oil states compact," to provide uniform control of production. Advocates of the tariff, it will be recalled, first got together following a conference at which Mark Requa, representing Washington, proposed such a compact. Then the producers would have none of it and staked their hopes on the tariff. That was months ago; now they still have faith in the tariff but an element wants the domestic control feature included. Such mixing of legislation will be as new as the idea of the federal powers encouraging diplomatic relationships as between the states. Previous sessions have passed up the oil tariff with little notice, but advocates now claim more strength and less opposition from New England. Part of the added strength is action by the directors of the Institute at Chicago. Advance information is that the referendum is showing Institute members favoring the tariff. Recent cargoes of gasoline from Europe are not given weight in the tariff argument.

Page 44

100,000 Barrels to Stocks

In the crude market there was no change during the week. Production was down 33,300 barrels to 2,420,100 barrels daily, but the fact that it is indicated that about 100,000 barrels or more per day is being added to storage, indicates that production is at least that much too high. Runs to stills by refiners are also above current requirements as shown by a gain of 1,174,000 barrels to gasoline stocks during the week. Movement to correct this situation was taken in an informal conference at Tulsa where it was suggested that Texas, Oklahoma and Kansas further restrict production. Amos L. Beaty brought out that so far curtailment efforts have extended to maintaining status rather than correcting the situation.

Page 41

Primitive methods ordinarily are associated with primitive peoples, because primitive peoples and their living standards make possible use of man power where steam must be used under ordinary conditions. Hollanders who are working in the East Indies are not addicted to primitive methods, but when primitive methods are indicated they take full advantage of the opportunity, and in so doing overcome a local situation that makes use of normal methods almost impossible, and at the same time drill oil wells at very low cost. The rice fields of Java prevent the transportation of engines and rotary equipment during a large part of the year, so man power is used to drill as deep at 1150 feet at a cost of $2.00 per foot or less. Actual drilling is less than five cents per foot for fuel and labor. The instance is perhaps of no practical value in most parts of the world, but it does show how ingenious are the producers of oil in overcoming whatever obstacles confront them.

Page 20

Shore Lines and Oil Fields

More than 2000 years ago the Greeks wondered at sea shells they noticed on mountain tops, their wonder being the start for geology in its purely scientific angle. Just for the sake of knowing things then, men of science have traced it out and found that the world has been a succession of inundations of the land by seas and subsequent eruption of the land again above the water. During these changes there were always points of land above the water, an example of recent note being the Sabine Uplift against which the great East Texas oil field snuggles—it was put there when all of the central part of North America was a sea with a sand stone island upon which a beach was built. This beach was made up of Woodbine sand with which was included that still elusive material which makes oil. Trapped in this reservoir and covered over by harder material which held it there, the deposit was so well hidden that geology with all its late developments had no method of knowing it was there. It is known that shore lines of ancient times are favorable for oil deposits, but when it comes to locating the deposit, geology for the time is back to when test holes were drilled purely on hunches. East Texas caught the geologists flat-footed and that circumstance opens up for more blind wildcatting just when it appeared that geology and geophysics had just about reduced location of oil to an exact science.

Page 22

Indications in Florida

One of the famous Rockefeller dimes was dropped into a well in Florida some time ago—as a christening ceremony. Now there are indications upon which geologists who are keeping close touch base strong hopes for production. Formations are being traced through to those found in sections of Louisiana and Texas. The test was started after thorough geophysical exploration.

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Advances in Technique Bring Saving in Drilling Time

By BRAD MILLS
Staff Representative

A COMPARISON of drilling time and cost of three wells recently completed in the Dominguez field by Union Oil Company, with the average drilling time and cost of three older and shallower completions of several years ago, reveals a marked improvement in drilling technique and demonstrates the possibility of profitable development under adverse conditions within the industry. Select crews, close supervision, co-operation between office and field forces, latest accepted drilling methods and uniformity of equipment at the different wells have been factors in a much faster completion program than was carried out during the development of the shallower zones.

The Dominguez field was discovered by Union Oil Company in September, 1923, and reached a peak production of 62,821 barrels in January, 1925. The discovery well was completed at 4068 feet and nearly all early development centered around the 4000-foot level. The field was never intensely developed, due to close control by Union Oil Company, Shell Oil Company and Associated Oil Company.

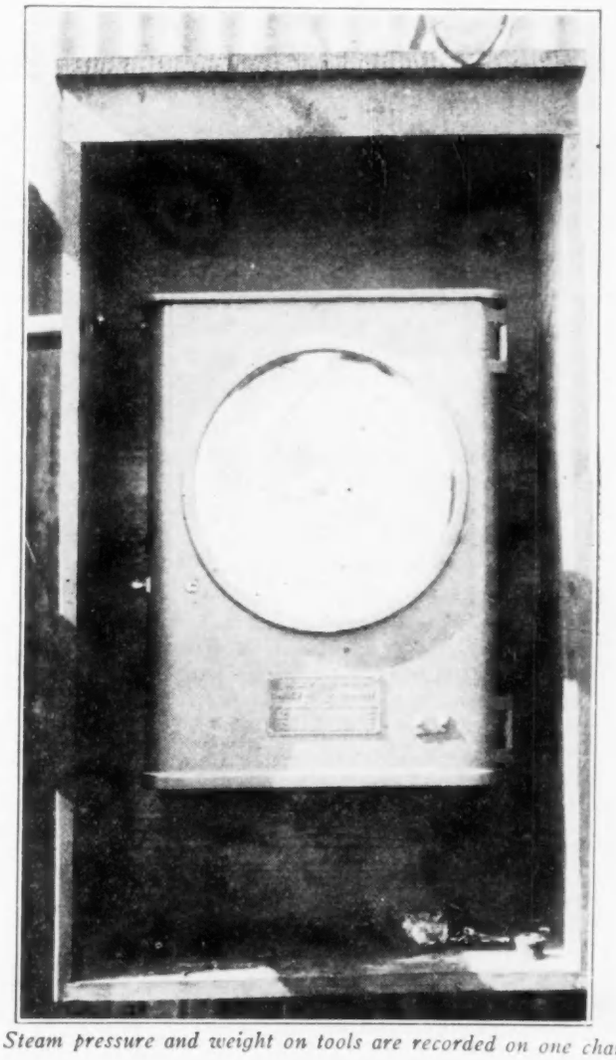
During the present year Union Oil Company was required to drill a limited number of wells to the lower or third Callender zone, which was known to be productive and which yields best between 4500 and 5000 feet. Development came when the company was not in need of more oil and at a time when the industry was trying hardest to get a better foothold. Development of the third Callender zone was not voluntary, but the necessity for action offered an opportunity to drill the new wells in the most economical manner.

Leading up to the present drilling at Dominguez are many interesting developments within Union Oil Company's own organization. For several years the company has been very active in research along many lines. Both drilling technique and equipment have been studied and improved, and the Dominguez operations furnished an excellent opportunity to demonstrate both theories and practices which have been largely originated within the company. The limited amount of field work being carried on in the state by the company released much talent for the Dominguez development, while proximity to Los Angeles and Santa Fe Springs headquarters was also a distinct advantage.

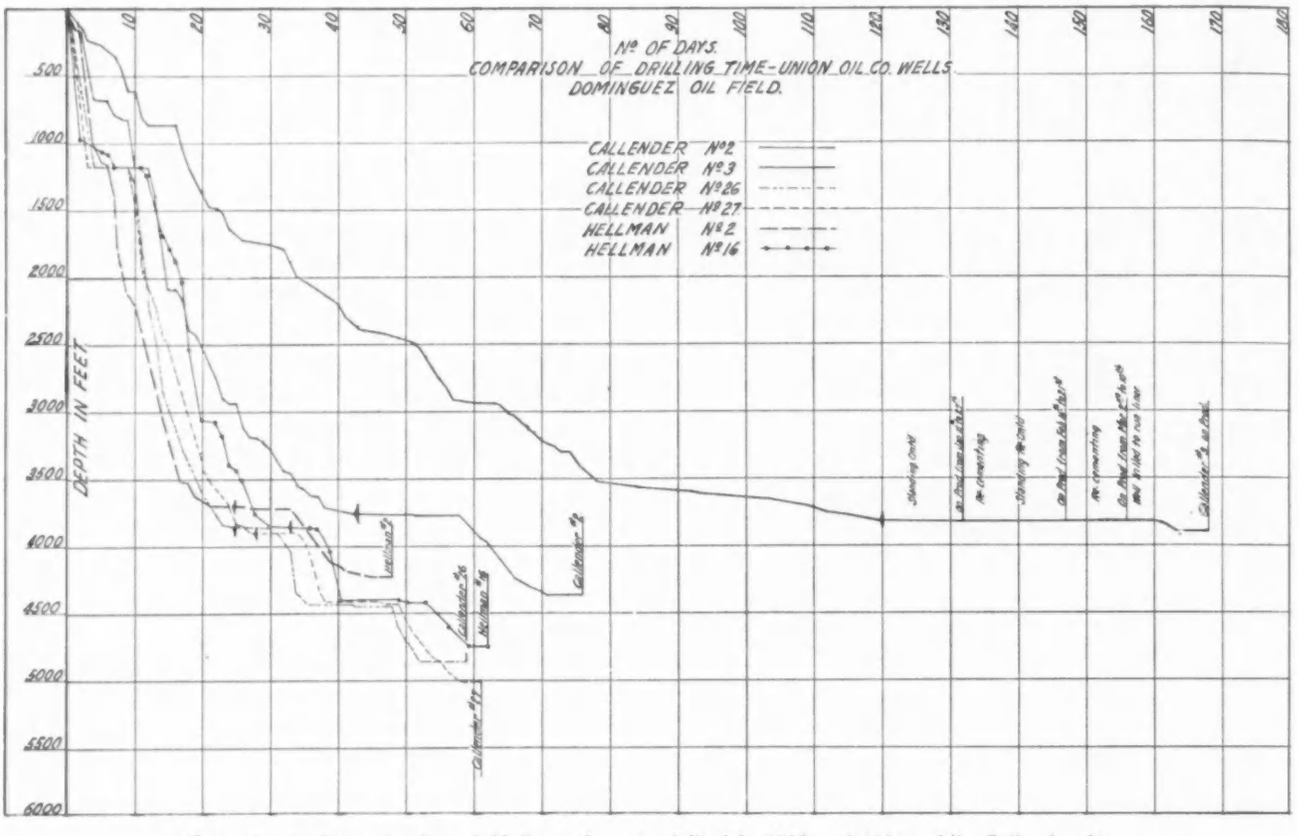
Most of the development of the past has occurred during extensive activity in various districts, but there is no reason to believe that such records as are being established at Dominguez could not be made under conditions which existed during the boom days of a few years ago. It is true that the company has been able to devote a more proportionate ratio of its resources to this small drilling program than it could do while engaged in extensive development in other fields, but this should not necessarily detract from the credit due. This question may be settled by the conclusion that theoretically several times as many wells as have been drilled at Dominguez this year might be drilled as efficiently and economically as the three completions under discussion.

Drilling Crews Easily Chosen

The selection of drilling crews for the Dominguez wells was not a difficult task. Union Oil Company has made adjustments all through its fieldranks during the past 18 months, and the members of active drilling crews repre-



Steam pressure and weight on tools are recorded on one chart



Callender 2, Callender 3, and Hellman 2, were drilled in 1925 *and* 1926, *while Callender* 26, *Callender 27 and Hellman* 16 *were drilled in* 1931

sents the cream of an organization dating back through many more prosperous periods. Practically every man on the Dominguez crews is a driller. Competition is keen, jobs appreciated and co-operation paramount. Each man can do the other man's work and the usual delays are not recorded. Running in and out of the hole and the usual repairs and adjustments can be made with the crews shuffled and selected for position at random. Such changes are not made promiscuously, but where a crew is largely composed of seasoned drillers, good results will be obtained under proper supervision. A good driller who doesn't mind to be third or fourth man on the derrick floor is bound to make a good third or fourth man. These men appreciate conditions within the industry and are content to establish a new record for drilling in a field which has never been sensational. The human element has always been difficult to measure, but it is playing a good part at Dominguez.

Supervision has been close but not especially stringent. The completions represent a well defined plan of attack, with all departments functioning to establish a good record. The warehouse is advised in advance of casing needs and completion equipment, while other departments which take part in cementing and incidental work are on hand for their particular tasks. From the executive to the superintendent and driller the plan is understood; and a close watch on the progress of each hole is maintained.

Regular meetings are held to discuss production problems. The meetings held bi-monthly are general and are attended by other departments; but the weekly meetings are attended by the superintendents and petroleum engineers within the production department and present opportunities to decide on the best course to pursue. Such problems as the type of bit to use, cementing practice, completion depths, amount of coring, reaming, deviation and other factors are discussed. General drilling technique is considered from every angle and often decisions are reached which lead to a departure from usual practice. Time saving innovations which affect running of casing, cementing and drilling have helped to lower the drilling time.

The old drilling curves show a flatter line where casing was cemented than is revealed by the curve of the more recent completions. It has been found that much time may be saved through an improved casing technique. A study of conditions at Dominguez simplified and speeded cementing operations.

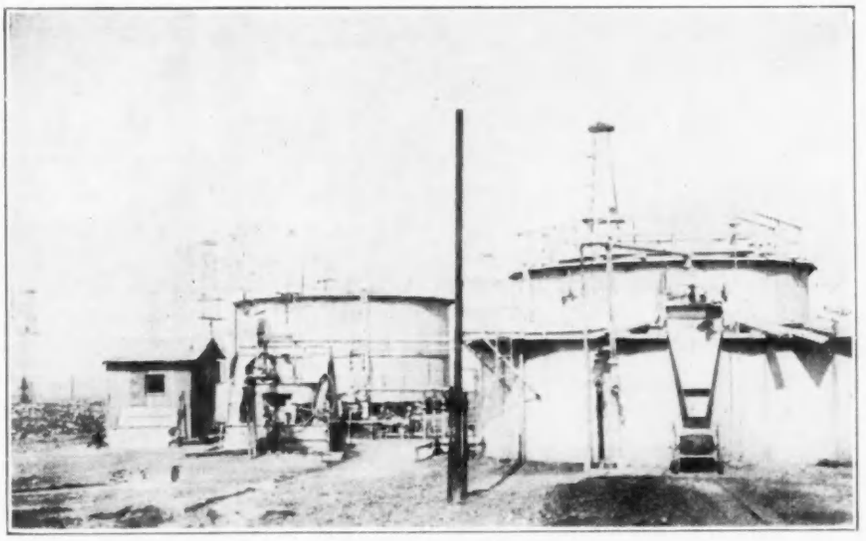
Uniform Equipment Maintained

A strict uniformity of equipment has been maintained. All of the four wells started from the surface have been rigged alike and the crews have had little to learn from a mechanical standpoint. Equipment has not been elaborate, but the full quota of safety and recording devices have been included. Standby engines have not been used and extremely heavy equipment is not needed for such a depth. The surface equipment represents a compromise between the elaborate layout used in some of the deeper fields and the more modest equipment of a few years ago.

Records are kept on the weight carried, steam pressure and rotary table speed. The steam pressure and weight carried are registered on a single chart. The weight recorder, an adaptation of the dynamometer, was perfected by Frank F. Hill, director of production for the company. It is hooked directly into the line between the block and the hook and works with a diaphragm on a hydraulic principle. Fluid is pumped into the recorder from the ground, the pressure being recorded on the chart by means of a small flexible hose. The hook-up is such that the pipe

may be weighed as a maximum load, but no greater weight can be imposed.

Maintenance of a central mud cleaning plant for the several wells has increased the drilling of the individual tests. A centrifugal cleaner which was first used successfully at Playa del Rey has been installed at Dominguez. Each well is connected to the system and clean mud on the return is assured. This circulating system, while not first used here, marks a forward step in handling mud. Sand is removed by the centrifugal cleaner, while the system also includes a series of settling basins to remove oil encountered below the cementing points.



Mud Cleaning Layout for the Dominguez Field

More attention is paid straight drilling than during the early development of the field, but the time consumed in checking the deviation has been a good investment. The average deviation has been small. The tendency has been toward more rapid rotation and less weight, with a correspondingly smaller amount of reaming necessary to maintain a straight hole.

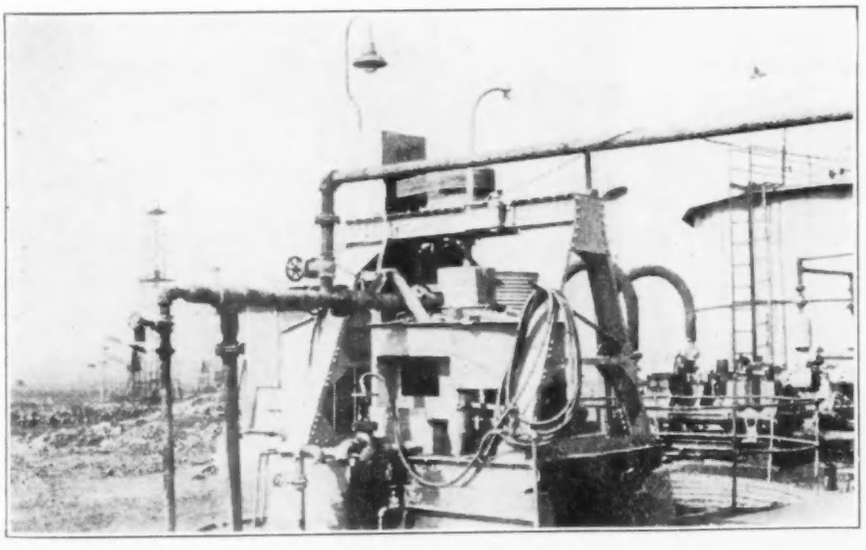
Many Factors Responsible

In summing up the reasons for much quicker drilling of the present wells, it is difficult to name one factor which is largely responsible for the better records. Elimination of the ragged edges of a dozen common practices have created a better standard of operation. The recording instruments keep a close creck on the crews and every shutdown is shown, while conditions favor the hard working crews.

No effort will be made to show a comparison of costs in dollars and cents between the most recent completions and those finished several years ago; but a study of the time charts shows that a difference does exist. Union Oil Company recently changed its method of accounting to distribute more equitably the cost of individual wells drilled. Under the old method a flat charge of $150 per day was made against each drilling well for equipment. Some of the wells were forced to carry a portion of the expense of other wells when a balance was struck at the end of a given period. If the cost of development exceeded the daily charge multiplied by the number of days, the shortage was proportioned among the wells active during the period. This method distributed the total costs satisfactorily, but the individual wells were not always treated fairly.

Under the new system of accounting each well is charged regular rates on all equipment. If a well escapes a fishing job and otherwise establishes a good record, it is forced to carry only its actual cost. The rapid completion time of the Dominguez wells insures a low cost. Casing costs are more or less fixed, but speed in running casing may reduce other costs appreciably.

The comparison of drilling time as shown by the graph includes three typical old wells and the three which had been completed prior to November 1, 1931. Callender 2, Callender 3 and Hellman 2 were drilled in 1925 and 1926 and represent three extremes. Callender 3 was completed around 3900 feet in 168 days, Callender 2 was a 4365-foot completion in 76 days and Hellman 2 was completed around 4250 feet in only 48 days. Hellman 2 was drilled to 3700 feet in better time than was recorded in either of the three recent wells, but the completion time flattened the curve somewhat.



Centrifugal Mud Cleaning Machine

Callender 26, Callender 27 and Hellman 16 were recently completed from the surface in almost exactly the same time. The depths were not the same, but the same practices were employed. Callender 26 was completed just below 4850 feet in 58 days, Callender 27 finished just below 5000 feet in 61 days, and Hellman 16 was finished at 4750 feet in 62 days. A study of the graph shows a uniform progress in all three wells.

The most recent work at Dominguez by Union Oil Company shows that development may be done economically under adverse conditions within the industry.

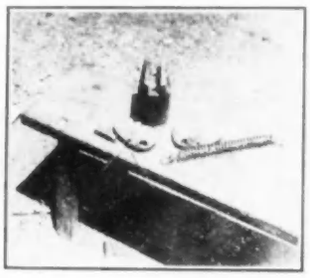


FIGURE A
Bit Parts

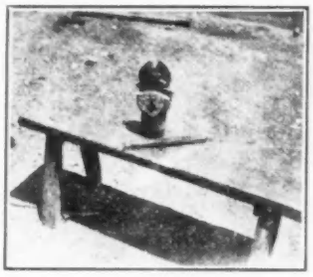


FIGURE B
Bit Collapsed

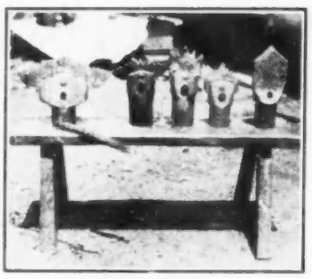


FIGURE C
Collection of Bits

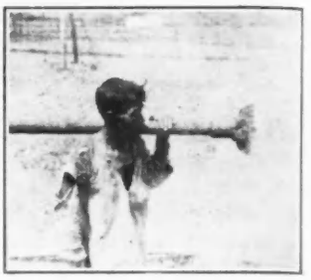


FIGURE D
Bit Expanded

Wells Drilled Manually at Low Cost in Java

By ROY E. LEIGH
Associate Editor

IT is possible under certain conditions, to drill producing oil wells ranging from 700 to 1150 feet in depth at a cost of less than five cents per foot for fuel and labor.

It is also possible to drill such wells with equipment, every unit of which is portable by man-power.

Such wells actually are drilled entirely by man and muscle-power.

It is possible, furthermore, to cut from 65 to 100 feet of hole per day; and to complete such wells in three weeks to one month, including cementing time.

Believe it or not, the cost of these wells ranges from $1000 to $1500 each, $1.50 to $2.00 per foot for material and labor, turnkey basis.

The conditions referred to above, which make such manual methods necessary and which make such cost records possible, are as follows:

Location: In the rice fields of Java, where, at certain seasons, the employment of mechanical transport is impossible.

Formations: Soft.

Depths: Shallow; 700 to 1150 feet.

Labor: Cheap, but well trained and efficient. Roughnecks earn the equivalent of 30 cents per day, while mandoers or boss-drillers earn the equivalent of 40 to 50 cents per day. Total labor cost, for nine men, less than $3.00 per day.

"You can't beat the Dutch," goes the old saying; and Dutch engineers representing Bataafsche Petroleum Maatschappij in the Soerabaja District of Java were not beaten by adverse natural conditions which defeated the employment of ordinary drilling methods.

It should be explained that Dutch petroleum engineers customarily know as much about modern drilling practice as is known anywhere; and nothing herein contained should be allowed to create the impression that they are not generally up to date in their operating methods. The situation is that heavy power machinery, including boilers, engines, pumps, and draw-works, cannot be moved across Javanese rice fields during the irrigation and rainy seasons; and, even if they could, operating cost would not compare favorably with figures achieved with specially-designed manual equipment.

Confronted with conditions as outlined above, B. P. M. engineers turned to the time-honored "chain-tong" method, by which rat holes have been drilled in this country since the development of the rotary. It was necessary only to assemble a light manually-operated hoist, a light-weight travelling block, a two-inch swivel and hose, a manually-operated pump, with wire lines and other equipment of similar light weight and capacity, not forgetting an adequate supply of two-inch tongs and two-inch line pipe for drill stem; and to design a set of bits and bit heads suitable

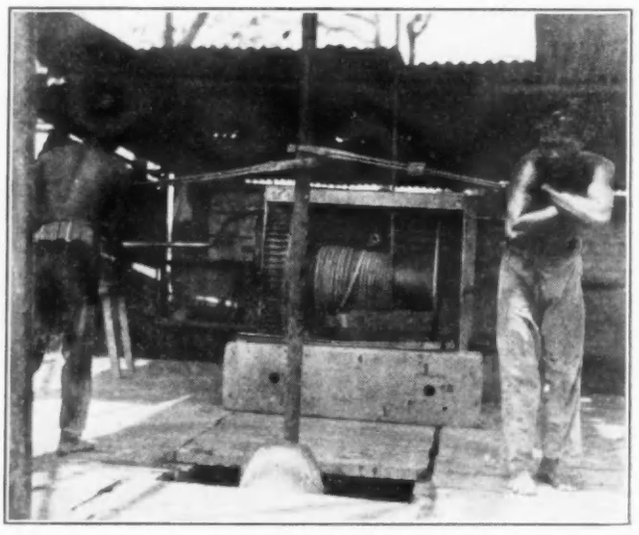


FIGURE G
Rotating

FIGURE E
Dressing Bit Blade

FIGURE F
10 x 4 x 10 *Gardner Pump*

FIGURE H
Traveling Block and Swivel

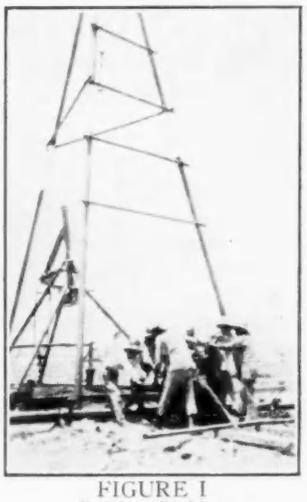


FIGURE I
Pulling Tubing

for such conditions, whereupon the outfit was complete. Of course, all that took some thinking and a bit of doing.

Collapsible Bits Used

Take the collapsible bits for example, shown in Figures A, B, C, and D. The water courses are shown in Figures B, C and D. The bit-head, blades, pin, coil-spring, and tie-wire which complete the assembly are shown in Figure A. The position of the blades when going in or coming out of the hole, through pipe, is shown in Figure B. At other times, particularly as when on bottom or drilling, the position of the blades is as shown in Figure D, they being held in such open position by the tension of the coil spring shown in Figures A, B, and C. The upper end of this spring is attached to a pin protruding inside the drill collar or lower joint of drill pipe; and the lower end is attached to the small holes seen in the blades in Figure A. The one-half inch diameter pin also seen in Figure A is shown in place in Figures B, C, and D, forming a pivot on which the two blades hinge when opening and closing. Diamond-point bits are used as required; but the serrated collapsible blades are made in the local blacksmith shop from ordinary plate iron, heated and hardened by the blacksmith himself. Blades are dressed with a file, as shown in Figure E.

Ordinarily, when operating entirely without steam power, the crew consists of nine men, including the mandoer or native boss. Four rough-necks rotate the drill pipe, by means of tongs; and four operate a manual pump to provide circulation.

The well on which these pictures were taken, however, was being drilled near a production boiler station; and, fortunately, steam power was available for the operation of a 10 by four by 10 Gardner steam pump, which was used as a slush pump.

Man-power was used in rotating, raising and lowering the two-inch drill pipe, however, as shown in Figure G. When this picture was made, unfortunately, the crew was away for lunch; but two workmen obligingly started the pump and rotated the drill pipe.

Drilling customarily is commenced with a diameter of 11 inches, and nine-inch pipe is set at 68 meters or 223 feet. A nine-inch hole is cut under the first string of pipe, and 5½-inch casing is cemented, using five to 10 sacks of cement, at a point immediately above the pay sand. Sometimes these native crews even "carry pipe" behind the bit, as the collapsible feature of their blades enables them to drill holes a diameter larger than that of the casing above. The sand is penetrated to a depth of about one-half meter, and liner or screen are not required.

Labor being cheaper than fuel, the manual method is carried through even into the production stage. Figure I shows a crew of roustabouts pulling tubing in the same district, likewise using a manual hoist.

Figure J shows a pumping jack of home-made construction, used in the same field. These shallow wells are pumped from central powers of European and American manufacture, including, notably, an "Iron Frame" unit made by Oil Well Supply Company which has been in service for more than 30 years.

FIGURE J
Shallow pumping well, Southern Java

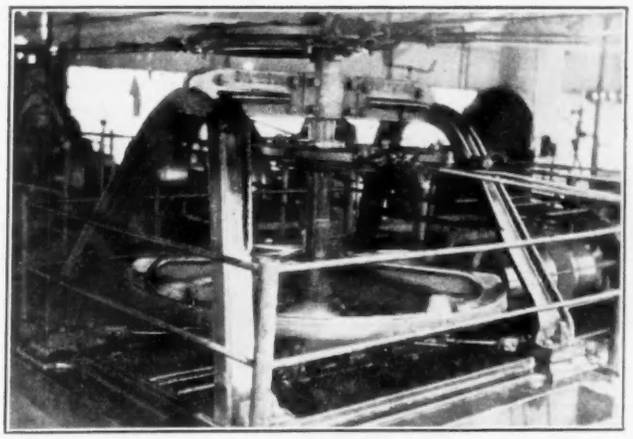


FIGURE K
"Oilwell" Iron Frame Power, Soerabaya District

Shore Lines Often Determine Location of Oil and Gas

East Texas Field Greatest Strand Line Pool

By RICHARD A. JONES
Geologist

DURING the millions of years which compose the geological history of the earth the relations of oceans and continents have varied greatly. At times the continents have slowly subsided and the waters of the seas have flooded the land, covering large portions of the continental masses. Later, the continents have been uplifted and the oceanic waters have drained back into their deep basins. This cycle has been repeated again and again.

Over 2000 years ago the Greeks noticed deposits of sea shells high on the mountains set back from the river Nile, and concluded that the Mediterranean Sea must once have inundated the land of Egypt. In the last 100 years, comprising the real development of the science of geology, the cycles of invasion and retreat of the oceans have been determined in general outlines. Maps have been prepared showing the approximate relative positions of land and sea in all the geological epochs.

These maps, "paleogeographical" maps they are called, were prepared with no thought of economic value, but only as the result of scientific curiosity. In recent years developments in the oil industry have demonstrated the great economic significance which these ancient transgressions of the oceans may have. Oil fields have been found along old "shore lines," now buried beneath younger deposits of rock. The position of the shore lines of oceans which once covered the land uncounted tens of thousands of years ago has become an important factor in the search for new petroleum accumulations.

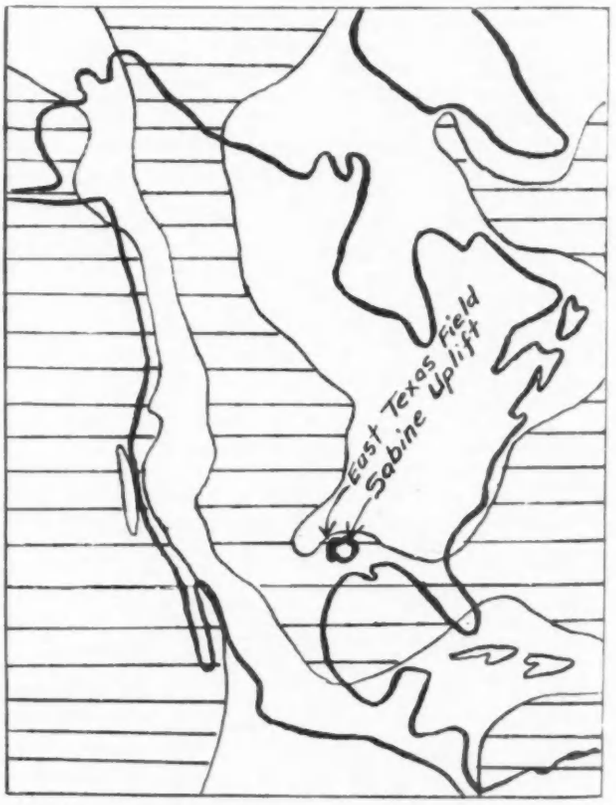
Oceanic Invasions of Land

When the globe was in process of formation, the molten rocks or magmas separated themselves into lighter and heavier portions. The heavier magmas, sinking deeper into the surface of the earth, caused the oceanic depressions. The lighter magmas were pushed upward by the lateral pressure of the heavy magmas and formed the continental masses.

Since the beginning of the Paleozoic epoch, following the initial period of the architecture of the earth, the oceanic basins and the continents have been in existence. The Atlantic and Pacific oceans and the continents of North and South America, Europe, Asia, and Africa have endured in general outlines since that time. However, it has only been in general outlines, in the persistence of certain heavier or oceanic segments and of certain lighter or continental segments of the earth's crust that there has been permanence in the relations of continents and oceans.

There has been a periodic flexibility in the relative positions of oceanic and continental areas. Many times the ocean waters have crept over thousands of square miles of the surface of the continents, forming shallow seas. Each geologic epoch has seen such an invasion of the land by the sea, flooding greater or lesser areas of the continental masses. The fact that the greater part of the land of North America, for example, is composed of sedimentary rocks deposited in ancient oceans that once covered the continent shows the extent to which the relations of land and ocean in the past have varied from the relations that prevail today.

The United States, since the commencement of Paleozoic days, has been flooded at least 12 times and probably no less than 17 times by inundations from the Arctic, Pacific, or Atlantic oceans. The greatest of these inundations were in the Pennsylvanian-Permian and Upper Cretaceous



Paleogeographic map of North America in the early part of the Upper Cretaceous, when the Woodbine sand was being deposited in Texas. Ruled areas—water. White areas—land. The Sabine Uplift and the present East Texas oil field are shown. The Sabine Uplift was in early Upper Cretaceous days an island in the continental ocean. It will be noted that a vast inland sea extended entirely across the central part of the United States, reaching from Mexico to the Arctic Ocean and Alaska. The Upper Cretaceous oceans at one time covered four million square miles of the surface of North America.
Adapted from Pirsson and Schuchert.

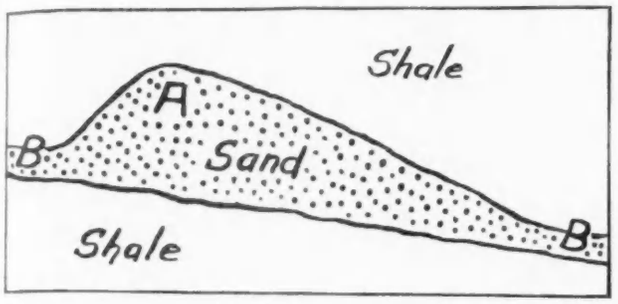


Diagram in cross-section displaying how a temporary halt in the advance of an ancient ocean over the land may cause the occurrence of oil and gas fields in later geologic epoches.

A—Lenticular body of sand built up along the halted shore line; pinching out on either side, and by reason of its porosity and its shape, simulating structure, a trap for oil and gas.

B—Normal thickness of shore line deposits when ocean is steadily advancing over land.

periods. At one time 4,000,000 square miles of North America lay beneath shallow epi-continental seas. An accompanying map shows the extent of the Upper Cretaceous ocean over North America,

How do such great invasions of the oceans occur? The answer lies in the cycles of geological history. During a period of crustal unrest, of volcanic activity and mountain building, the continental segments of the earth are raised far above the water level of the oceans. Then begins a period of erosion, of wearing away of the land, and transportation of material into the sea. This process is slow but it is steady. It is the cumulative effect of infinitely small changes over millions of years that finally produces gigantic results.

The amount by which the land is worn away each year may be roughly gauged by the quantity of sediment carried into the oceans by rivers. Careful observations have been made upon the Mississippi River. The drainage area of the Mississippi is something over 1,000,000 square miles. The river carries into the Gulf of Mexico below New Orleans annually about 7,500,000 cubic feet of silt, sand, gravel, and mud. A simple computation establishes that the streams of the Mississippi system lower the surface of their drainage basin, in general terms, one six-thousandth of a foot each year. This figure seems insignificant for one can scarcely conceive of one six-thousandth part of 12 inches. Nonetheless, as has been mentioned, it is the persevering continuance and tenacity of such infinitesimal changes which perform geological changes and make geologic history. Supposing this rate of wearing away or denudation of the land over the entire surface of North America to be the same as that of the drainage basin of the Mississippi River, the whole continent of North America would be reduced to sea level in 4,500,000 years. This period is a small part of the time-piece of geology. In the scale of geological time, 4,500,000 years is a very, very brief span.

Processes Unvarying

The processes which today are wearing down North America and other continents acted in the past as at present. Always the land was being carried into the ocean by the rivers. The result has been that time after time the continents have been reduced to flat plains, gently sloping to the sea, with isolated mountains or land masses of the hardest rock arising here and there. Over these enormous plains the rivers meandered in lazy, wide-swinging curves.

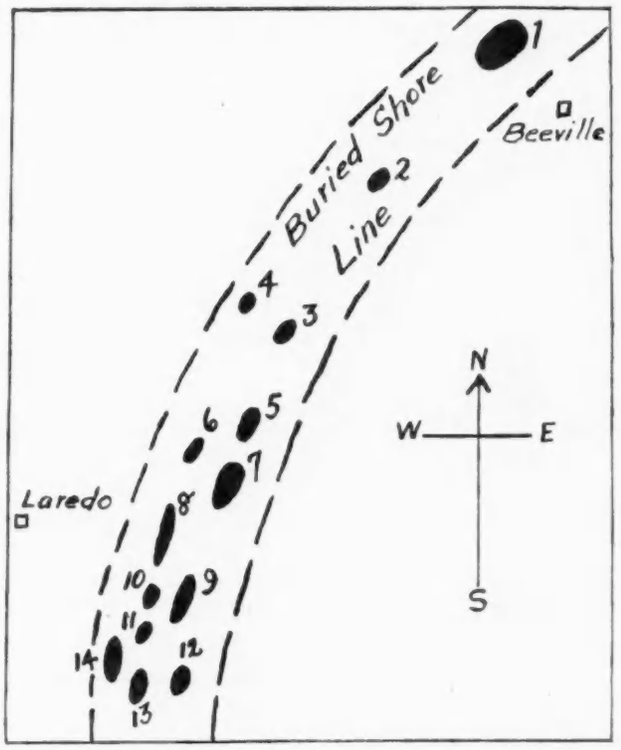
As the land became flatter and lower, the ocean gradually swept in until large parts of the continents were covered with shallow seas. In these continental seas there began the deposition of sediments from those portions of the continental masses which were not under water. Sometimes, in fact quite often, the flooding of part of a continent was accompanied by the elevation of highlands in another part, from which rivers carried down mud and sand into the epi-continental ocean.

For long ages these continental seas existed—perhaps as long as it had taken to erode the continent to sea level. Then there began again a period of volcanic eruptions, earthquakes, and uplift of mountains, and the land came up out of the water. The advance of the ocean upon the land had been infinitely slow, but its recession was comparatively rapid.

The ultimate, final reason for such cycles of land and water is obscure. These cycles are connected with the general shrinking of the outer shell of the earth, and with the pressure upon each other of the heavy oceanic segments and the lighter continental segments. These segments may be likened to great wedges of rock extending far into the diameter of the earth. What happens 50 or a 1000 miles beneath the surface in the way of adjustment of these earth segments is not known. Much has been learned about the periodic inundation of the continents by the oceans, and many things have been observed and recorded; but, as in so many branches of knowledge, the primary cause is veiled in mystery.

Formation of Shore Lines

As the water advanced upon the land during these invasions of the continents by the ocean, there was always



Sketch map showing fields of Southwest Texas from Laredo to Beeville, along ancient buried shore line or beach deposit of Yegua and Fayette age (Eocene, Tertiary). The shore line trend extends both northeast of Beeville and south of the Mirando pools, beyond the limits shown on the map.

1. Pettus field, Bee County.
2. Callihan field, near McMullen-Live Oak County line.
3. Government Wells field, Duval County.
4. Vacuum field, Duval County.
5. Kohler field, Duval County.
6. Carolina-Texas field, Webb-Duval Counties.
7. Cole-Bruni field, Webb-Duval Counties.
8. Mirando City-Aviators field, Webb County.
9. H-W-F field, Jim Hogg County.
10. Mirando Valley field, Zapata County.
11. Cuellar field, Zapata County.
12. Randado field, Jim Hogg County.
13. Escobas field, Zapata County.
14. Jennings field, Zapata County.

a beach or strand line at the front of the advancing sea. Sand was deposited along these beaches, exactly as is the case today on the shores of the oceans. The beaches moved continually inland with the encroaching waters. The final general result of an ocean inundating the land was to form a widespread blanket of sand and other beach deposits, such as oyster shells, over a great expanse of territory. Shales and limestones were deposited above this layer of sand, as the water became successively deeper off-shore from the turbulent waves of the advancing beach. The depositional results of an invading ocean are displayed in the Lower Cretaceous or Comanche sediments of the region west and northwest of San Antonio, Texas. The logs of wells show how the Lower Cretaceous ocean laid down the Trinity or Basement sands, with the Glenrose limes and marls above them, over hundreds of square miles of territory; and the advance of the Lower Cretaceous sea can be plainly followed in its transgression northwestward.

The sands deposited by the ocean waters flooding the land are clearly porous reservoir beds, favorable for the storage of oil and gas, but, beyond this, the question may well be asked: Just why should these old shore line sandstones have especial significance in the finding of oil fields?

The beach line was in general always advancing, but its advance was irregular and flexible. For long ages the shore line may have remained stationary, before it again resumed its forward march. Thus, along a coast line, having a definite direction, for example, northeast and southwest, were deposited exceptional amounts of sand. This condition may be observed today along the coast of Texas, from Corpus Christi to Brownsville, where the Gulf of Mexico has piled up the great sand bars of Mustang and Padre Islands.

The unusual quantities of sands accumulated at points where the advancing sea halted are the "shore lines", which are of importance in the search for new oil fields. Such deposits are lenticular, pinching out into shales on either side, and forming natural traps for oil and gas. In addition, the halting of the forward movement of the ocean often was caused by structural disturbances and temporary uplift of the land. Thus, folding and faulting quite commonly occur along such old shore lines. Still further, the maintenance of a strand line at one point for long geologic ages gave the remains of the prolific animal life of the beach opportunity to accumulate in exceptional quantities in the muds and sands. Plant debris was also concentrated in uncommon degree. This organic material may later have been transformed into oil and gas.

Productive Shore Lines of Mirando and Pettus Regions, Southwest Texas

A number of fields have been developed since 1921 in the Laredo or Mirando region of Southwest Texas, east of Laredo, in Webb, Zapata, Jim Hogg, and Duval Counties. Among these pools are the Escobas or Muckleroy, Randado, Mirando Valley, Aviators, Schott-Mirando City, Cole, Carolina-Texas, and Government Wells fields. The oil comes from various shallow sands from 1300 to 2400 feet beneath the surface. The different pay zones consist of sands and sandy shales, associated with beds of lignite and oysters. The production is from the Fayette and Yegua formations—the "Jackson Sands" of Eocene age.

The fields of the Laredo territory are strung out in north-south and northeast-southwest trends. Some are west of the Reynosa Escarpment, the predominant topographical feature of the region. Others are east of the escarpment.

The pools that have been discovered in the Mirando district are due to a combination of shore line deposition and structure. Without doubt local folding and faulting have had a large share in the formation of the traps in which oil and gas has accumulated. This is shown both by subsurface evidence from logs and by various surface geological features. The Reynosa Escarpment marks, in general, the trend of these structural disturbances.

The Eocene oceans which invaded Southwest Texas in Tertiary days were oscillatory seas. They advanced, they retreated, they remained stationary for long periods. A shore line of the Eocene ocean in Fayette and Yegua times stood where the oil fields of the Mirando region now occur. Along this "temporarily permanent" beach accumulated the sands and sandy shales in which, later, oil and gas were stored. The lenticular shape and variable porosity of the sand deposits aided in trapping the petroleum. The organic materials buried in the sands and shales seem to have been the source of the oil. The structural features now present were probably caused by the crustal movements which halted the advance of the sea inland. The conditions in the Laredo district fulfill as well as can be expected, the characteristics of the ancient shore lines, which have been described in the preceding division of this article as being those strand lines favorable for the formation of oil and gas pools. Taken as a whole, the Mirando district is one of the best examples to be found anywhere of the occurrence of oil and gas fields along ancient buried shore lines.

The Pettus Field

The Pettus field was opened up early in 1930 about 10 years after the discovery of the Laredo pools. It is in Bee County, approximately 100 miles northeast of the Mirando fields. The producing horizons are much deeper, being around 3900 feet, but belong to the same general group, the Fayette-Yegua or "Jackson Sands" of the Eocene division of the Tertiary.

The oil and gas of the Pettus area is along the outcrop of the Reynosa formation, as in the Mirando district. It is part of the same Eocene shore line that caused the fields east of Laredo. As in the Mirando territory, the trapping of the oil and gas has been occasioned by a combination of lensing sand bodies, deposited on the beaches of the old Eocene ocean, and structural features, especially faulting. There is controversy among geologists as to which of these two factors is the more important. Some maintain that structure has practically nothing to do with the oil accumulation at Pettus, but that it has been controlled entirely by depositional sand conditions. Others lay more stress upon faulting. They assert that indications of pronounced structure exist at Pettus. For example, it is said that Union Producing Company's Ray 30 is 146 feet higher structurally than Morgan's McKinney 1, which is only one mile north of Ray 30. Also, Ray 30 is said to be over 300 feet higher on structure than Union Producing Company's Ray 4, a mile to the southeast. This data places Ray 30 on a fault or anticline between Ray 4 and McKinney 1.

East Texas Greatest Shore Line Field

In Upper Cretaceous time occurred one of the greatest inundations of the continent of North America in geologic history. The water came in from both the Gulf of Mexico and the Arctic Ocean and formed a vast sea extending entirely across the central portion of North America from Mexico and Texas to Alaska. In the early stages of this oceanic invasion various large islands were present in this continental sea. One of the largest of these was a land mass—the Sabine Uplift—in northeast Texas and northwest Louisiana.

For a long period the advancing Upper Cretaceous ocean halted on the edges of the Sabine Uplift. On the west side of the uplift was deposited the Woodbine sand. After the deposition of the Woodbine sand, which was never laid down on top of the Sabine Uplift, the invading Upper Cretaceous ocean advanced rapidly and soon placed under

(Continued on page 68)

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Relation of Pipe Line Currents and Soil Resistivity to Corrosion

By C. R. WEIDNER and L. E. DAVIS
The Prairie Pipe Line Company, Independence, Kansas

A LIMITED amount of data recently accumulated from observations on pipe lines are presented to supplement and verify the results of previous investigators. Although still incomplete and somewhat erratic, the data tend to show: 1. That there is some correlation between long line currents and corrosion. 2. That there is quite a definite correlation between soil resistivity and corrosion, which promises to be of practical value in soil corrosivity surveys, especially after more data have been accumulated.

This paper was presented at Twelfth Annual Meeting, American Petroleum Institute, at Chicago, November 11, 1931.

THE determination of soil corrosivity is of great economic importance to pipe line companies, both from the standpoint of protecting new lines and the reconditioning of old ones. Logan[1] recently summarized a number of tests for the determination of the corrosiveness of soils, and pointed out briefly their limitations and essential features. Of the various methods described, Shepard's is one of the most practical for field use, on account of the ease in making frequent and rapid tests of earth resistivity along a pipe line or along a proposed route.

Shepard[2] in his pioneering work did not obtain complete and conclusive data, on account of the impracticability of examining the pipe lines to determine the pit depths. Gill and Rogers[3] have made a complete pipe line current and soil resistivity survey for an eight inch oil pipe line eight miles in length, located in the Texas Gulf Coast area. Their conclusions are different from Shepard's.

The purpose of the work described in this paper and the data presented are to supplement the work of previous investigators and to verify their results.

Some Factors Affecting Pipe Corrosion

In making a study of pipe line corrosion, it should be borne in mind that long line currents and soil resistivity are only two of a large number of factors or variables that affect the corrosion of pipe. Therefore, at the outset a list of some of the more important factors is given:

A. Soil conditions.
   1. Electrical resistivity.
   2. Classification—silt, loam, clay.
   3. Texture—fine or coarse, colloids.
   4. Chemical constituents—acid or alkaline.
   5. Permeability—also ability to absorb and retain water from a lower level.
   6. Cross-section—kind and depth of sub-soil.
   7. Origin—glacial, alluvial, underlying rock.
   8. Age—amount of weathering.
   9. Oxygen concentration.

B. Topography.
   1. Ravines, creek and river crossings.
   2. Slope, with or across pipe line.
   3. Benches or flat places on a hillside.
   4. Seepage, hillside springs.
   5. Swamps and salt marshes.

C. Rainfall—amount and distribution.

D. Electric currents.
   1. Stray currents from electric railways, power and telegraph lines.
   2. Galvanic or long line currents.

E. Artificial conditions.
   1. Oil leaks.
   2. Drainage—from oil and gas wells, refinery and factory wastes, barnyards.
   3. Road crossings.
   4. Connections to other pipe lines.
   5. Vegetation.
   6. Cinder fills.
   7. Protective coatings.

Scope of Work

The authors recently have had the opportunity to measure the soil resistivity and pit depths along 58 miles of eight inch oil pipe lines located in Oklahoma. This amount of pipe was being taken up for use in a different location. Long line currents were measured on only 11.4 miles of one line, as time and personnel did not permit taking these measurements for the entire mileage. Figure 1 shows the location and Table 1 the description of the pipe lines.

Measurement of Long Line Currents

The method and equipment used in measuring long line currents were the same as Shepard's. Where the line was uncovered, contacts were made with a C-clamp (Figure 2B). Most of the contacts, however, were made with seven-eighths inch drill steel bars (Figure 2A) 42-inch long diamond-pointed on the contact end. These were driven down to the top of the pipe, well tapped with a hammer to loosen any scale or rust, and foot pressure applied to the top, while the meter readings were observed. This method of contact proved to be rapid and satisfactory. No difference in the meter readings was observed whenever one method of contact was checked with the other.

The difference in potential between two points on the line 100 feet apart was measured with a standard millivolt meter with two scales—one graduated from 0 to 2.5 millivolts, the other from 0 to 5.0 millivolts. Connections from the line to the meter were made with 110 feet of 14-gage weatherproof copper wire. The magnitude of the electrical current carried by the line was computed directly from the potential drop, using the equation one millivolt equals 1.37 amperes.

Measurements usually were taken 500 feet apart, except where the current was constant, in which case they were

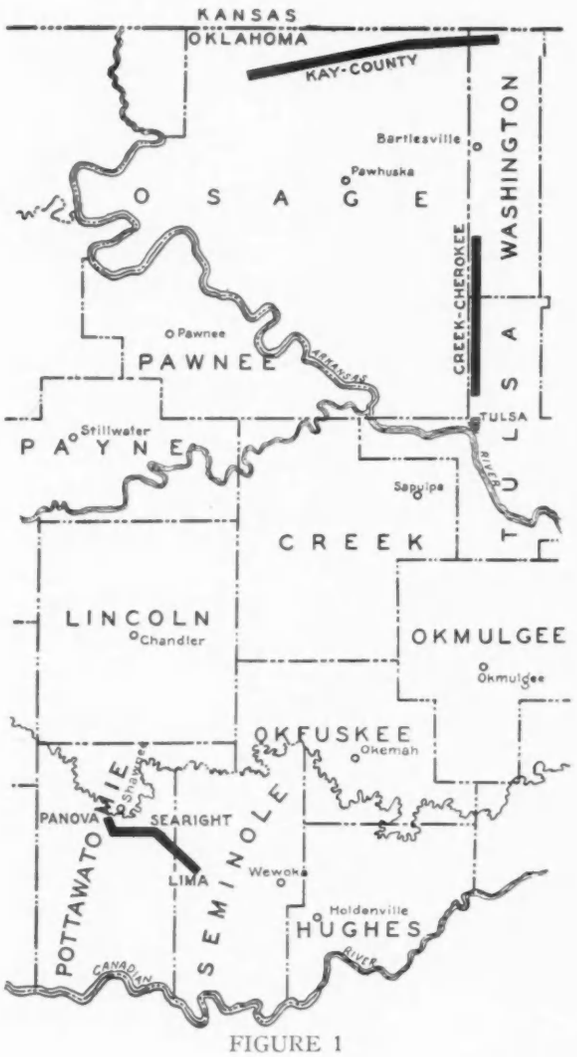


FIGURE 1

taken about 1000 feet apart. Where the current discharged or reversed, measurements were taken every 100 feet and in some cases every 25 feet.

Current measurements were taken only on two sections of the Kay County line. One section, 6.1 miles in length, was near the east end of the line; and the other section, 5.3 miles in length, was near the middle.

The complete data observed have been plotted on long rolls of profile paper; but as reproduction of these plates is rather impractical for publication, a sample portion is shown in Figure 3. The data for long line currents are limited, incomplete, and somewhat erratic.

Some Observations on Long Line Currents

For the first two miles of the east section measurements

FIGURE 2

Relation of Pipe Line Currents and Soil Resistivity to Corrosion

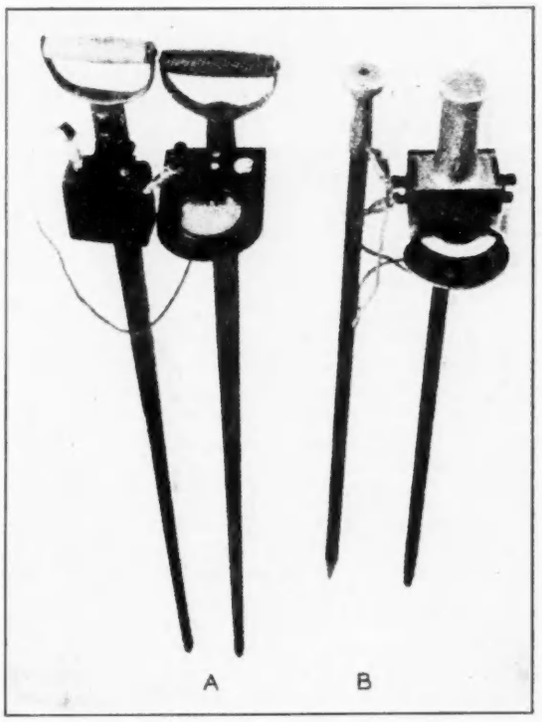


FIGURE 4

Relation of Pipe Line Currents and Soil Resistivity to Corrosion

TABLE 1

Description of Pipe Lines

Steel Pipe, 8 In., 28.5 Lb.; Wall Thickness, 0.322 In.

Name	Age	Miles	Joint	Coating	Measurements
Creek—Cherokee A	20	8.4	Screw	Thin paint	Resistivity
Creek—Cherokee B	10	4.5	Screw	Thin paint	Resistivity
Creek—Cherokee C	5	1.0	Screw	Heavy paint	Resistivity
Kay County	8	24.4	Welded	Asphalt	Resistivity and currents
Searight—Panova	6	9.3	Welded	Enamel	Resistivity
Lima—Searight	3	10.4	Welded	Enamel	Resistivity

Creek-Cherokee is one continuous line; Sect. B is a 4.5 mile extension to the original Sect. A; Sect. C is a replacement of part of the original line due to corrosion.

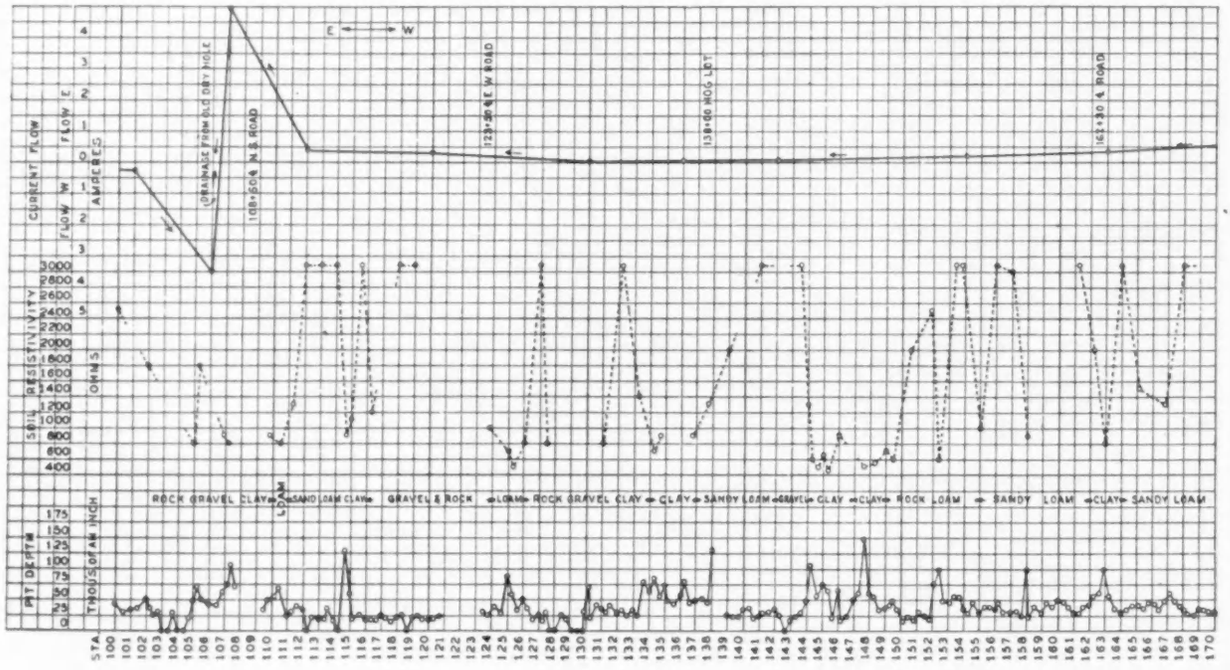


FIGURE 3

were taken the day following an extremely heavy rain. The ground was thoroughly soaked from the surface to a depth below the bottom of the pipe. Some amazing reversals and discharges of current were observed for these two miles. The potential difference at all points of reversal or discharge was greater than five millivolts. As this was the maximum measurement that could be made with the meter used, it was impossible to compute the exact amperes at these points. However, some interesting facts were developed. At all points of current discharge, with one exception, the soil resistivity was 1200 ohms or less, the average being about 800 ohms. In the one exception mentioned the resistivity was 1400 ohms. The pitting along these two miles was more general and relatively more severe than for the rest of this section. Since there were no known sources of stray current, and since the current became more regular after the ground dried out, it is assumed that the large variation was due to the increase in moisture content of the soil. The remaining four miles of this section showed five points of discharge and five reversals, and the current was fairly uniform.

The middle 5.3 miles section showed four reversals and four points of discharge, one of the latter being in the Caney River. Generally, the current flow was regular on this section. Where the current was discharging from the line, soil of low resistivity and relatively deeper pits was found.

Although the long line current data are incomplete, the following observations appear warranted:

1. The magnitude and fluctuations of long line currents were greater than those observed by previous investigators. A maximum of over 6.85 amperes was observed in several places.
2. Long line currents are not constant, but may vary from time to time, due probably to moisture content of the soil, terrestrial magnetic currents, solar activity, and probably other causes.
3. The depth of pits seems to be dependent on the magnitude of the current. Taking into consideration the age of the pipe, eight years, and the low resistivity in many places, the pit depths were not large. However, an average of the current measurement showed about 0.5 amperes, which probably was not large enough to cause serious loss of metal.
4. Loss of current is not always indicative of serious pitting, unless concentrated at points of low resistivity. Conversely, when line is picking up current, it cannot be definitely said that there will be no pitting. Pitting may occur along such stretches if there is sufficient leakage at points of low resistivity.
5. Long line current measurements furnish a rapid and inexpensive method of examining existing pipe lines to determine the portions that need reconditioning. Such measurements must, however, be supplemented with resistivity measurements.
6. In attempting to take measurements of long line currents on a pipe line paralleling a telegraph line within a few feet, evidence of stray current of considerable magnitude was found.

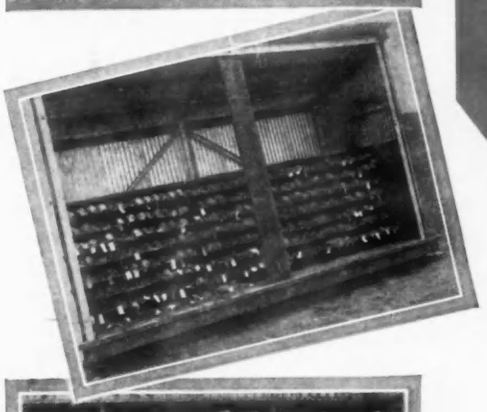
Measurement of Soil Resistivity

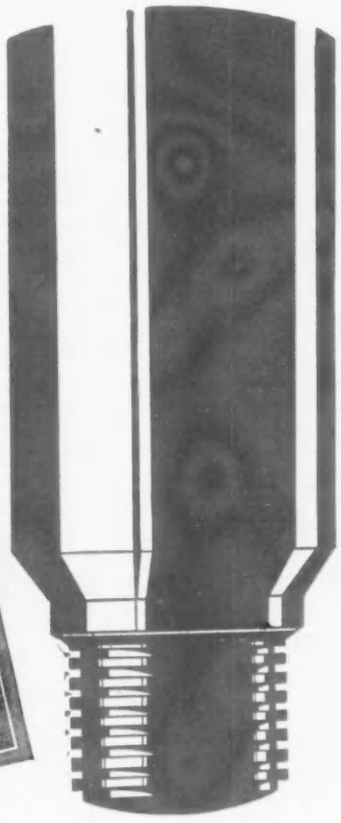
The electrical resistivity of the soil was measured with Shepard's old style apparatus (Figure 4A). This consists of two oak rods, 42 inches long, with a three-volt dry cell mounted on one rod and a voltmeter on the other. The electrodes near the bottom are pieces of one-fourth-inch brass pipe, five-sixteenths inch long. Shepard's improved design (Figure 4B) has a much larger cathode than anode contact to overcome the effect of polarization. The rods are thrust into holes in the ground six or more inches apart while the resistivity readings are being observed. The apparatus used was calibrated in a salt solution against Shepard's improved design, and the scale of the meter was graduated to read directly the resistance in ohms.

In using this apparatus it is necessary, in order to obtain accurate readings, to get good contact with the soil. In gravel or rocks it is impossible to obtain readings. Some of the difficulties encountered are listed below:

1. Great care must be taken to get good contact with the soil even under average conditions.
2. Soil may be too dry.
3. Soil may be too hard.
4. Rock may be too close to surface.
5. Sand and gravel make poor contact.

Where the soil was too dry to obtain good readings, a





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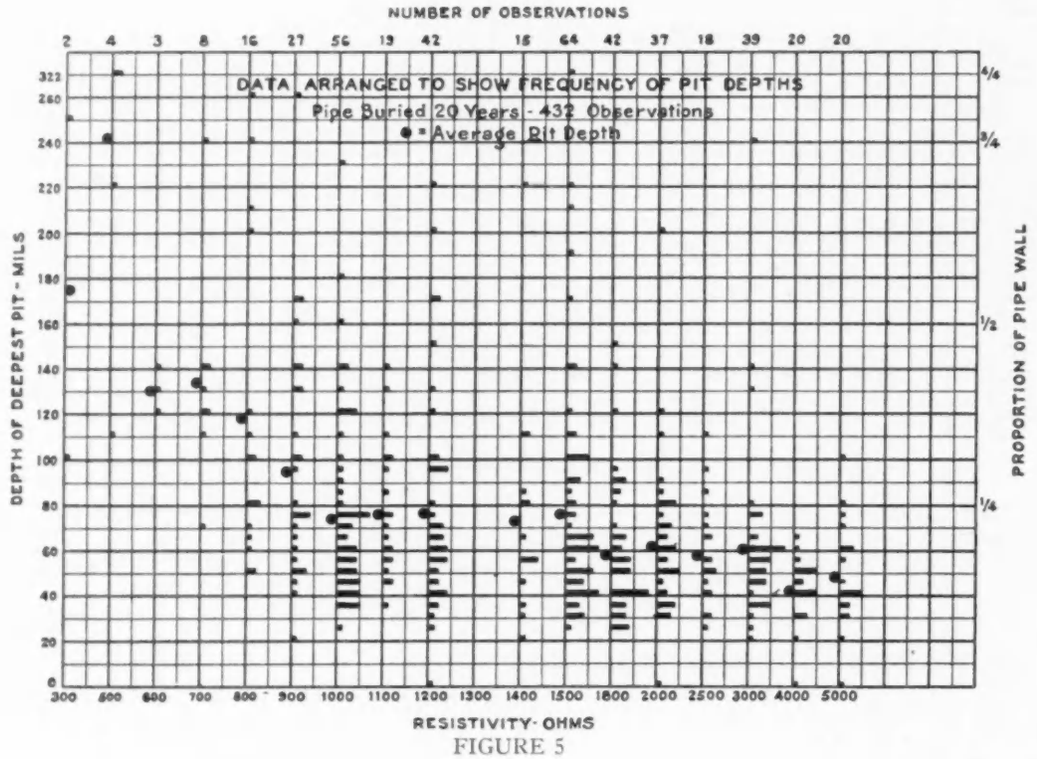

NUMBER OF OBSERVATIONS
2 4 3 8 16 27 56 19 42 18 64 42 37 18 39 20 20
DATA ARRANGED TO SHOW FREQUENCY OF PIT DEPTHS
Pipe Buried 20 Years - 432 Observations
● = Average Pit Depth
DEPTH OF DEEPEST PIT - MILS
PROPORTION OF PIPE WALL
4/4
3/4
1/2
1/4
0 20 40 60 80 100 120 140 160 180 200 220 240 260 322
300 400 500 600 700 800 900 1000 1100 1200 1300 1400 1500 1800 2000 2500 3000 4000 5000
RESISTIVITY - OHMS
FIGURE 5

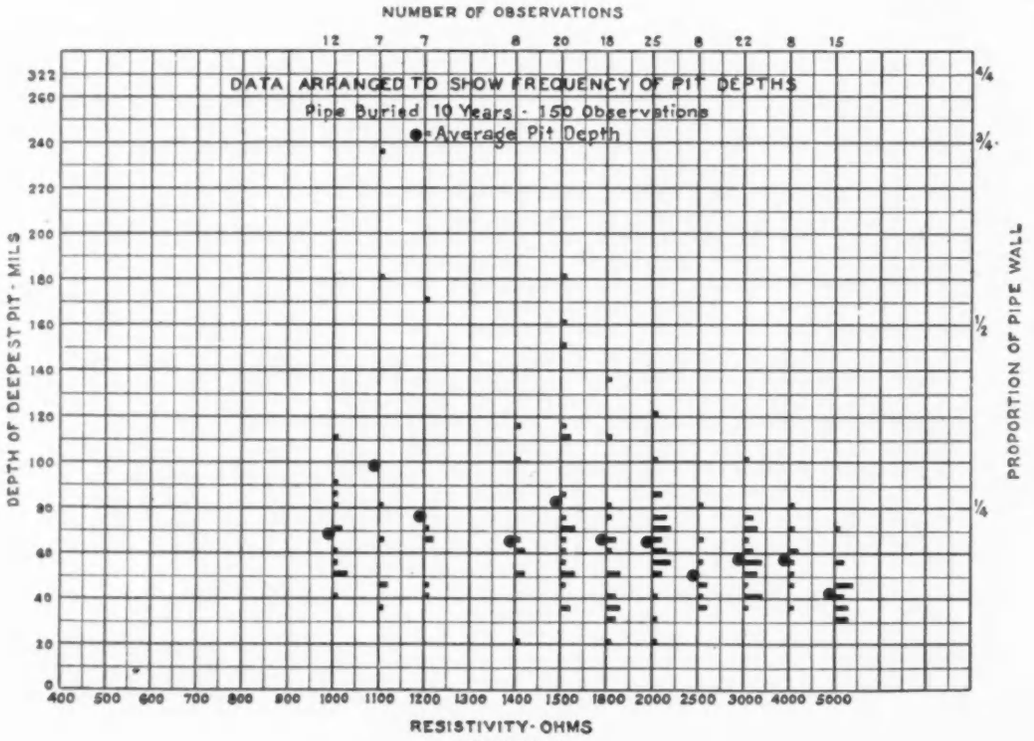
steel bar was used to make the holes, in which the rods were inserted. To make better contact water was poured into the holes. These holes had to be made carefully so that the bottom was not larger than the diameter of the electrodes.

Most of the observations were taken in the bottom of the ditch below pipe depth, where the soil usually was moist. Resistivity measurements were taken generally every 100 feet along the line; but where the pipe showed severe pitting or the resistivity varied, readings were often taken as close as five feet apart.

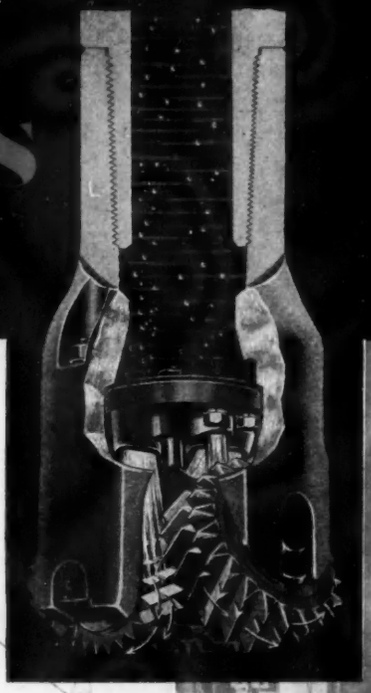
Some Observations on Soil Resistivity

1. It requires extreme care to obtain the resistivity, or even the relative resistivity, of the soil along a pipe line. An experienced observer is required for accurate measurements.

(*Continued on page* 80)


NUMBER OF OBSERVATIONS
12 7 7 8 20 18 25 8 22 8 15
DATA ARRANGED TO SHOW FREQUENCY OF PIT DEPTHS
Pipe Buried 10 Years - 150 Observations
● = Average Pit Depth
DEPTH OF DEEPEST PIT - MILS
PROPORTION OF PIPE WALL
4/4
3/4
1/2
1/4
0 20 40 60 80 100 120 140 160 180 200 220 240 260 322
400 500 600 700 800 900 1000 1100 1200 1300 1400 1500 1800 2000 2500 3000 4000 5000
RESISTIVITY - OHMS
FIGURE 6

RESULTS COUNT



Type 31 Bit Head showing action of slush volume on all cutters and on bottom of hole.

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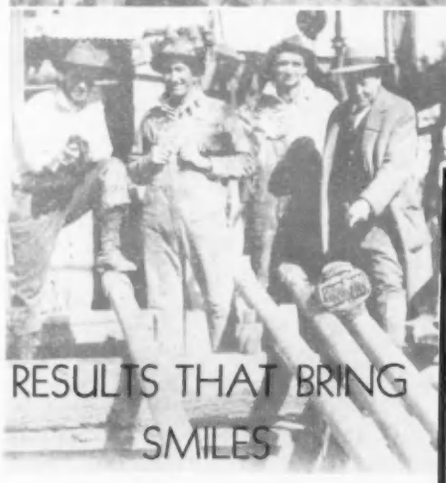
—Actual excerpt from field report. Name of company upon request

THESE PAGES WITH ACTUAL FIELD REPORTS UPON REQUEST



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Unit Cutter assembly of Reed Type 31 Roller Bearing Bit.

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Markets • Production • Crude Prices

H. J. STRUTH, *Staff Economist, Houston, Texas*

Crude Storage Mounts Despite Lower Output

A decline last week in daily average crude production of 33,300 barrels apparently offered little resistance to persistent additions to the stored supply. Reports from Oklahoma and Kansas indicate that stocks of crude increased last week at the combined rate of about 52,000 barrels a day, even though production of these states had dropped to the extent of 35,000 barrels a day. From these figures, it would appear that the current market demand for Oklahoma and Kansas oil is not more than about 575,000 barrels a day, whereas the allowable of these two states makes a total of 655,000 barrels.

Total daily average production of the United States last week amounted to 2,420,100 barrels, which exceeded the combined allowable figure by only 58,000 barrels. It is seen, however, that this figure is decidedly misleading since it is based upon allowables which are not justified by actual market requirements. While last week's decrease in production was a favorable turn, the fact remains that production is still considerably above what it should be under economic requirements. Oklahoma and Kansas allowables should be reduced immediately in order to equalize the differences shown by stock increases each week. Texas allowables should also be reduced to the extent where supply and demand attain necessary balance. This also applies to California, where actual production has failed to recede to the levels set by proration officials, and where stocks of crude are also beginning to mount.

East Texas Shipments Above Production

The situation in East Texas continues to reflect market strength, due to the fact that production has been maintained for several weeks at a point somewhat below actual shipments. It was pointed out in last week's issue of THE OIL WEEKLY that East Texas production was rapidly nearing the point where it would exceed 400,000 barrels a day, and it was pointed out therein that the 400,000-barrel mark would undoubtedly be reached this week. As expected, well allowables were considered for revision by Governor R. S. Sterling and announcements stated that a new order was to be issued limiting the well allowance to 110 barrels a day. This order was rescinded, however, and is being subjected to further consideration. At any rate, a downward revision is necessary immediately, since nearly 12,000 barrels of new allowable production was added last week as a result of the completion of 93 producing wells in East Texas. This will bring the field total up to a daily average of about 400,000 barrels. The daily average last week amounted to 387,950 barrels.

From an over-all viewpoint, it is obvious that mounting storage in various parts of the country is an unfavorable sign, despite the fact that the season of the year would ordinarily justify additions to storage. Under plans of control, the industry has definitely set about to reduce excessive stocks of crude and the only way that can be accomplished is by cutting production schedules down to the point where withdrawals from storage will continue. Current market requirements are perhaps considerably under 2,300,000 barrels a day and the production of more than 2,400,000 barrels of oil daily must result in continued piling up of additional, unnecessary reserves. The situation has reached the stage where it is up to each major producing area to balance actual current requirements with production quotas that will prevent additions to storage. Competitive angles in the situation must be considered only as they affect the outgo of any particular district. The main issue is to gauge production by actual shipments rather than by potential market outlets. This reasoning is particularly applicable to the present condition in Oklahoma and Kansas.

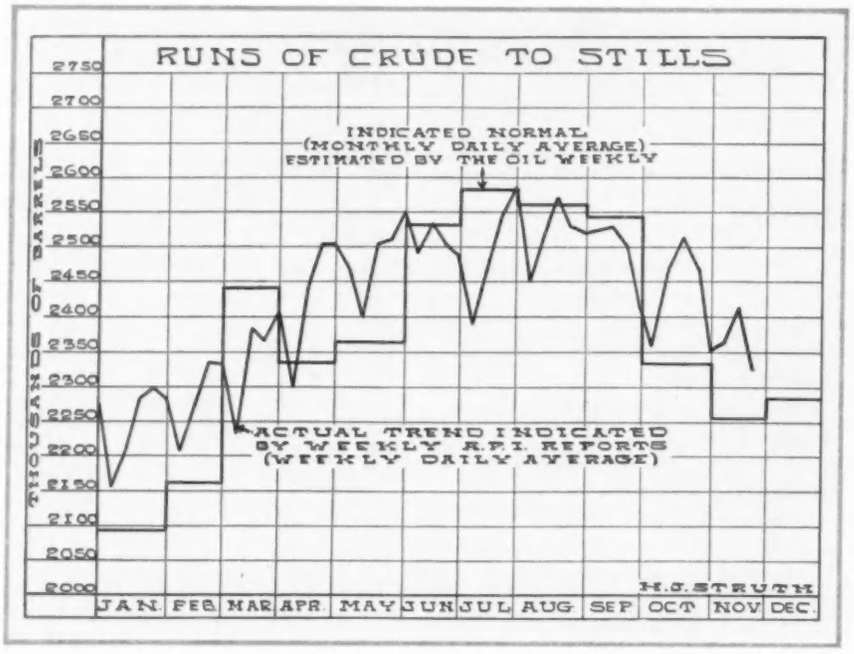
Practically all the decline recorded last week in daily average crude production was due to a drop of 34,700 barrels in Oklahoma's output. Kansas' production was up but 300 barrels last week. East Texas recorded a gain of 16,700 barrels, due to new wells placed on the allowable production schedule, but this gain was offset by declines in Louisiana, Arkansas, Eastern States, and Rocky Mountain States. California's production increased 300 barrels, continuing to hover around the 505,000-barrel mark. Drilling permits showed a periodic decline, from 289 during the week ending November 21 to 191 last week. Texas permits dropped from 258 to 152. The completion of fewer wells last week in East Texas resulted in a sharp decline in rated initial production of the United States which dropped from 1,211,954 barrels to 868,235 barrels. Well completions in all sections of the country showed a decline of 69 from the preceding week.

Stocks of Gasoline Continue to Increase

Gasoline stocks reported to the American Petroleum Institute by refiners last week indicated a gain of 1,174,000 barrels. The reported total refinery stock of gasoline was 33,685,000 barrels, compared with 32,511,000 barrels in the preceding week. The rate of increase in gasoline stocks was undoubtedly accelerated by a gain in quantity of crude run to stills. Last week, refinery runs of crude, on a Bureau of Mines basis, amounted to approximately 2,361,000 barrels daily, compared with 2,329,000 barrels in the preceding week. While the daily rate of throughput for the past two weeks has been considerably below the rate prevailing previously, it is still far out of line with the economic limit dictated by the declining demand for gasoline.

The seasonal decline in gasoline demand was amplified last week by the advent of rigorous climatic changes over a large area of the country. Heavy rains, snow and extremely cold weather in the middle Western, Southwestern and Rocky Mountain states accounted for a severe decline in gasoline consumption. Despite these conditions, the industry has been handicapped severely by the accumulation of excessive supplies of gasoline as a result of over-running

MARKET SECTION



crude through stills. The present level of refinery still runs is shown by the accompanying chart to be considerably above normal, while the rate at which runs should have been maintained during November and December, 2,175,000 barrels, makes the present rate appear foolhardy indeed. If gasoline stocks had been reduced to the extent indicated as normal by the economics committee of the American Petroleum Institute, present additions to storage would not have been considered out of line with normal seasonal procedure. However, the present level of gasoline stocks is far above normal and cannot fail to prove a burden to the carry-over into next year.

Reduction of California Allowable Is Proposed

Reduction of California's allowable to around 450,000 barrels daily has been recommended by the economics committee appointed some time ago to determine the amount of production, as justified by both exports and domestic consumption. This means that a further reduction of more than 30,000 barrels will be attempted, if recommendations of the committee are accepted. The present state allowable is 487,500 barrels and the actual production about 505,000

Crude Runs to Stills, Gasoline Stocks and Gas and Oil Fuel Oil Stocks

Report for Week Ending November 21, 1931

(Figures in barrels of 42 gallons)

District	Potential Cap (Daily) Reporting	Per Cent	Crude Runs to Stills Total	Daily Average	Per c't Operated	Gasoline Stocks (see note below)	Gas & Fuel Oil Stocks
East Coast	633,700	633,700	100.0	2,834,000	404,900	63.9	4,127,000	10,209,000
Appalachian	149,600	137,400	91.8	699,000	99,900	72.7	1,201,000	1,634,000
Ind., Ill., Ky.	436,300	431,500	98.9	2,181,000	311,600	72.2	3,232,000	5,776,000
Okla., Kans., Mo.	485,700	435,200	89.6	1,713,000	244,700	56.2	2,665,000	4,892,000
Texas	838,200	765,400	91.3	3,969,000	567,000	74.1	6,504,000	11,838,000
Louisiana-Arkansas	233,100	230,500	98.9	1,118,000	159,700	69.3	952,000	4,053,000
Rocky Mountain	160,900	143,800	89.4	322,000	46,000	32.0	1,295,000	810,000
California	914,500	888,100	97.1	2,995,000	427,800	48.2	*12,535,000	97,052,000
Total Nov. 21	3,852,000	3,665,600	95.2	15,831,000	2,261,600	61.7	32,511,000	136,264,000
Total Nov. 14	3,852,000	3,665,600	95.2	16,401,000	2,343,000	63.9	31,891,000	136,127,000
Total Nov. 22, '30	3,730,100	3,571,200	95.7	16,036,000	2,290,800	64.1	†34,888,000	139,254,000
The Texas and Louisiana Gulf Coastal figures shown below are included above in the totals of their respective districts.								
Texas Gulf Coast	532,500	531,500	99.8	2,977,000	425,300	80.0	4,964,000	8,504,000
La. Gulf Coast	147,500	147,500	100.0	747,000	106,700	72.3	827,000	3,264,000

Note: In all the refining districts indicated except California, figures in this column represent gasoline stocks at refineries. In *California, they represent the total inventory of finished gasoline and engine distillate held by reporting companies wherever located within continental United States—(stocks at refineries, water terminals and all sales distributing stations, including products in transit thereto).

†Revised in Indiana-Illinois district, due to transfer to "Bulk Terminals" of stocks previously reported as "At Refineries".

MARKET SECTION

HOW LAST WEEK'S DAILY AVERAGE PRODUCTION COMPARES WITH NECESSARY AND NORMAL QUOTA LIMIT

State—	Indicated Demand Fourth Quarter 1931	Economic Limit Fourth Quarter 1931	Daily Average Last Week	Daily Excess Last Week	Daily Average Since January 1	Daily Excess Since January 1†
Arkansas	56,000	50,000	37,500	—12,500	43,725	—10,675
California	500,000	487,500*	505,400	+17,900	521,095	+27,595
Kansas	113,000	110,000	104,950	—5,050	106,294	—6,306
Louisiana	75,000	60,000	61,300	+1,300	62,909	—7,591
Oklahoma	525,000	545,000*	523,850	—21,150	471,667	—44,833
Texas	860,000	900,000*	972,250	+72,250	901,149	+142,449
Balance of U. S.	214,000	210,000	214,850	+4,850	208,791	—24,984
Total	2,343,000	2,362,500	2,420,100	57,600	2,315,630	+75,655

*Allowable.
†Excess based on allowable to date.

barrels. Efforts to bring the average output to the allowable have not been successful.

Kettleman Hills has served notice indirectly that it should be allowed more than 60,000 barrels daily. This unofficial claim has been based on the fact that while the rest of the state has been declining steadily, Kettleman Hills has boosted its potential to an extremely high figure. Despite this high potential, production has been held to 60,000 barrels. Other fields will not want to reduce their allowables to make room for more oil from Kettleman Hills.

The sharp decline in Panama Canal shipments has alarmed certain Pacific Coast economists, who maintain that the loss must be overcome through further curtailment of production. Fall shipments of gasoline through the Canal to the Atlantic seaboard were extremely light, and little hope of an increase is seen.

A meeting of the general curtailment committee will be held in Los Angeles next week to act on the recommendations of the special committee. The smaller fields will have

Cracked Gasoline Production

Week Ending November 21, 1931

(Barrels of 42 gallons)

	Potential Charging Capacity Total	Daily Reporting	%	Production Total	Daily Average
East Coast	261,300	236,300	94.0	655,000	93,600
Appalachian	56,300	54,100	96.1	167,000	23,900
Ind., Ill., Ky.	330,400	315,400	95.5	571,000	81,600
Okla., Kans., Mo.	237,800	219,500	92.3	338,000	48,300
Texas	450,800	436,200	96.8	907,000	129,600
Louisiana-Arkansas	112,400	112,400	100.0	257,000	36,700
Rocky Mountain	99,900	98,400	98.5	115,000	16,400
California	190,800	190,800	100.0	321,000	45,800
Total Nov. 21	1,739,700	1,663,100	95.6	3,331,000	475,900
Total Nov. 14	1,739,700	1,663,100	95.6	3,474,000	496,300
Total Nov. 22, '30	1,589,200	1,315,900	82.8	2,400,000	342,900

The Texas and Louisiana Gulf Coastal Figures Shown Below are Included Above in Totals of Their Respective Districts.

Texas Gulf Coast	352,400	347,400	98.6	719,000	102,700
La. Gulf Coast	77,000	77,000	100.0	188,000	26,900

Imports of Petroleum at Principal United States Ports

(Barrels of 42 gallons)

	Week Ended Nov. 21	Week Ended Nov. 14
AT ATLANTIC COAST PORTS—		
Baltimore	304,000	150,000
Boston	53,000	39,000
New York	667,000	*574,000
Philadelphia	308,000	62,000
Others	171,000	*39,000
Total	1,503,000	*864,000
Daily Average	214,714	123,429
AT GULF COAST PORTS—		
Galveston District	20,000	40,000
New Orleans and Baton Rouge	129,000	.....
Port Arthur and Sabine District	.....	*26,000
Tampa	.....	.....
Total	149,000	*66,000
Daily Average	21,286	9,428
AT ALL UNITED STATES PORTS—		
Total	1,652,000	*930,000
Daily Average	236,000	132,857
Daily Average Four Weeks Ended	232,429	216,429
Distribution of Total Imports is as follows:		
Crude	824,000	*583,000
Gasoline	302,000	39,000
Gas Oil	.....	92,000
Fuel Oil	526,000	*216,000
Total	1,652,000	*930,000

*—Revised.

Receipts of California Oil at Atlantic and Gulf Coast Ports

(Barrels of 42 gallons)

	Week Ended Nov. 21	Week Ended Nov. 14
AT ATLANTIC COAST PORTS—		
Baltimore	.....	.....
Boston	.....	.....
New York	.....	175,000
Philadelphia	.....	116,000
Others	.....	.....
Total	.....	291,000
Daily Average	.....	41,571
AT GULF COAST PORTS—		
Total	.....	26,000
Daily Average	.....	3,715
AT ATLANTIC AND GULF COAST PORTS—		
Total	.....	317,000
Daily Average	.....	45,286
Daily Average Four Weeks Ended	27,536	38,143
Distribution of Total California Oil Receipts is as follows:		
ATLANTIC COAST PORTS—		
Gasoline	....	196,000
Fuel Oil	.....	95,000
Total	.....	291,000
AT GULF COAST PORTS—		
Gasoline	.....	26,000
Total	.....	26,000

MARKET SECTION

United States Daily Average Production

1930	Oklahoma	Kansas	Texas (Outside Gulf Coast)	Gulf Coast	North Louisiana	Arkansas	Eastern States	Rocky Mountain	California	United States Daily Av.	United States Total
June	665,550	133,600	668,300	210,500	40,300	56,900	135,750	84,600	598,000	2,593,500	77,806,900
July	594,750	121,600	652,350	209,400	40,550	55,400	137,200	98,350	610,450	2,520,050	78,121,200
August	558,850	115,650	646,400	206,600	41,500	55,100	128,550	106,000	611,250	2,470,900	76,597,600
September	558,900	116,550	606,550	200,750	40,150	53,550	121,400	110,650	604,900	2,413,400	72,402,205
October	542,100	114,850	609,500	194,850	41,500	52,800	121,750	104,000	590,800	2,372,150	73,536,350
November	491,550	111,400	579,350	190,100	44,050	52,000	116,400	101,950	601,200	2,288,000	68,639,150
December	459,300	105,550	533,400	189,300	43,000	51,100	112,200	100,500	587,450	2,181,800	67,636,500
1931											
January	452,000	106,350	511,050	188,850	41,100	50,700	110,300	96,700	535,700	2,092,750	64,874,450
February	473,750	114,450	523,700	185,600	43,950	49,950	109,800	100,100	527,300	2,128,600	59,600,450
March	531,900	110,550	585,000	177,950	40,250	47,550	108,800	95,400	528,100	2,225,500	68,990,850
April	543,650	109,250	723,050	185,850	39,050	47,000	111,500	95,500	527,350	3,382,200	71,465,750
May	561,950	107,400	767,200	185,950	39,200	46,650	111,250	97,500	534,150	2,451,250	75,975,950
June	556,850	103,150	828,250	170,100	36,500	44,900	108,950	97,950	520,300	2,466,950	74,009,750
July	527,950	100,000	912,250	157,850	33,650	41,400	107,600	94,400	517,900	2,493,000	77,282,700
August	306,150	101,900	976,800	153,550	30,400	37,650	109,600	92,900	510,900	2,319,050	71,890,200
September	261,050	104,600	752,250	149,950	29,600	38,000	117,400	92,250	505,550	2,050,650	61,518,950
October	423,600	103,950	865,800	153,500	29,200	37,750	121,600	93,950	503,800	2,333,150	72,327,750
Nov. 7	534,850	106,450	878,000	158,800	29,050	37,750	121,600	94,200	496,100	2,456,800	17,197,600
Nov. 14	543,750	102,900	864,650	158,100	29,600	37,750	124,900	94,600	507,900	2,464,050	17,248,350
Nov. 21	558,550	104,650	835,900	158,050	29,550	37,750	127,950	95,900	505,100	2,453,400	17,173,800
Nov. 28	523,850	104,950	844,750	159,650	29,150	37,500	122,700	92,150	505,400	2,420,100	16,940,700
Increase	.....	300	8,850	1,600	.....	.....	.....	.....	300	.....	.....
Decrease	34,700	.....	.....	.....	400	250	5,250	3,750	.....	33,300	233,100

Last Week's Daily Average Production by Districts

TEXAS	Nov. 28	Nov. 21
Panhandle	56,150	62,200
North Texas	55,950	57,250
West Central Texas	26,250	26,250
West Texas	203,000	203,700
East Central Texas	56,500	56,850
East Texas	387,950	371,250
Southwest Texas	58,950	58,400
Texas Gulf Coast	127,500	125,650
TOTAL TEXAS	972,250	961,550
OKLAHOMA	523,850	558,550
CALIFORNIA	505,400	505,100
KANSAS	104,950	104,650

LOUISIANA	Nov. 28	Nov. 21
North Louisiana	29,150	29,550
Louisiana Gulf Coast	32,150	32,400
TOTAL LOUISIANA	61,300	61,950
ARKANSAS	37,500	37,750
MOUNTAIN STATES		
Wyoming	36,450	39,750
Montana	7,750	7,750
Colorado	3,800	3,950
New Mexico	44,150	44,450
TOTAL MOUNTAIN STATES	92,150	95,900
Eastern Etates*	122,700	127,950
TOTAL UNITED STATES	2,420,100	2,453,400

*Includes Michigan.

Summarized Review of Field Results

State—	Completions This week	Completions Last week	Oil Wells This week	Oil Wells Last week	Gas Wells This week	Gas Wells Last week	Failures This week	Failures Last week	Initial Prod. This week	Initial Prod. Last week
Arkansas	2	5	0	0	0	0	2	5	0	0
California	6	8	6	6	0	0	0	2	4,925	32,350
Illinois	1	0	1	0	0	0	0	0	15	0
Indiana	16	0	4	0	4	0	8	0	80	0
Kansas	13	6	9	6	2	0	2	0	3,485	4,555
Kentucky	9	0	6	0	2	0	1	0	265	0
Louisiana	7	10	3	3	1	0	3	7	4,420	980
Michigan	3	5	2	3	0	1	1	1	3,500	3,900
Mississippi	5	1	0	0	3	0	2	1	0	0
New Mexico	0	0	0	0	0	0	0	0	0	0
New York	7	7	5	6	1	0	1	1	17	47
Ohio	19	29	3	11	14	13	2	5	47	127
Oklahoma	15	11	9	3	2	1	4	7	9,307	325
Pennsylvania	14	29	11	21	3	7	0	1	54	78
Texas	122	195	98	157	2	7	22	31	842,115	1,169,592
West Virginia	9	11	1	0	7	8	1	3	5	0
Total	248	317	158	216	41	37	49	64	868,235	1,211,954
Increase	..		..		4		..		....	
Decrease	69		58		..		15		373,719	

Comparison of Permits Granted for New Wells

State—	For Week Ending Nov. 28	Previous Week	This Week 1930	Total This Month	This Month 1930	Total this Year	Total This Date Last Year	1930 Year Total
Arkansas	0	2	1	5	9	34	101	108
California	2	3	44	17	82	328	890	922
Louisiana	5	4	16	22	55	295	909	948
Kansas	13	11	10	42	59	428	911	944
Oklahoma	19	11	27	65	160	769	2,715	2,830
Texas	152	258	90	793	412	6,381	6,794	7,052
Total	191	289	188	944	777	8,245	12,300	12,804

MARKET SECTION

to stand the bulk of the reductions, even if Kettleman Hills is not granted an increase in its allowable. The actual allowable suggested for the state is 456,700 barrels.

The refined market is still in a ragged condition, and the crude price structure has been affected by the weakness. Delivery of oil to refiners to run "down the line" to market in the form of refined products has given the crude and gasoline markets a very close connection.

Higher crude prices would make attainment of a lower allowable an easier matter, but there is some doubt whether a boost at this time would be justified in the face of claims that too much oil is being produced.

Oil and Gas Income Taxes Exceed $10,000,000 in 1929

Washington, D. C.—Income taxes exceeding $10,000,000 were collected from corporations in the oil and gas producing industry for 1929, it is disclosed by statistics of income for that year just issued by the Bureau of Internal Revenue.

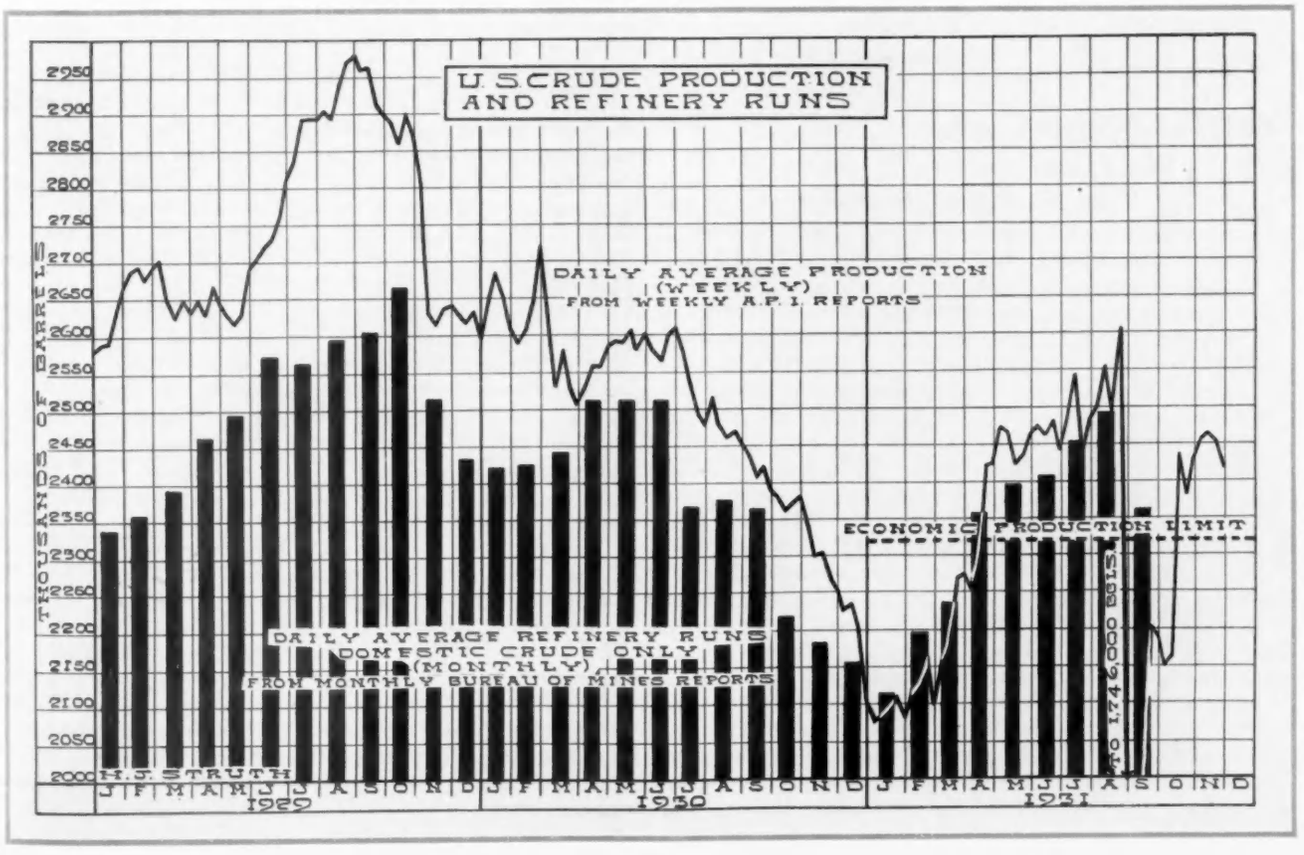
The report shows that 5003 returns were filed by such corporations, 2311 reporting no net income, having gross income of $192,881,427 and deficits aggregating $74,946,528, while 842 concerns were inactive and reported no data.

The 1850 corporations paying taxes, however, had gross income in 1929 of $780,849,158, net income of $104,548,662 and net loss for prior year of $7,371,675, the aggregate tax of these companies being $10,437,571.

Natural Gasoline Production Showed Decline in 1930

Washington, D. C.—Natural gasoline output of the United States reversed its trend in 1930, according to a report just issued by the Bureau of Mines. Production in 1930 amounted to 2,210,494,000 gallons, as compared with 2,233,688,000 gallons in 1929, a decrease of 1.0 per cent. Since the production of natural gasoline is influenced to a large extent by the output of crude oil, according to G. R. Hopkins, the curtailment of crude production last year accounted for the lessened output of natural gasoline. Nevertheless, the facts show that the output of natural gasoline was influenced also by the increased demand for natural gas and this resulted in a larger output than would otherwise have resulted on the basis of curtailed crude oil production. Another factor in the decline in output last year was the drop in yield per thousand cubic feet of gas treated. To meet new specifications for natural gasoline, the manufacturers found it necessary to do more stabilizing, which means that what formerly comprised the lightest ends of their product must now be utilized in some other way.

The average yield of natural gasoline per 1000 cubic feet of gas treated dropped in 1930 to 1.06 gallons, from a rate of 1.14 gallons in 1929. This marks the second successive year in which the yield of natural gasoline has declined. There has been a steady decline, also, in the number of plants in recent years, but the total capacity of the plants has shown a consistent gain. There were 1035 plants in operation in 1930, compared with 1087 in 1929 and 1119 in 1927. Total capacity of all plants is estimated at approxi-


U.S. CRUDE PRODUCTION AND REFINERY RUNS
DAILY AVERAGE PRODUCTION (WEEKLY) FROM WEEKLY A.P.I. REPORTS
DAILY AVERAGE REFINERY RUNS DOMESTIC CRUDE ONLY (MONTHLY) FROM MONTHLY BUREAU OF MINES REPORTS
ECONOMIC PRODUCTION LIMIT
TO 1,746,000 BBLS.
THOUSANDS OF BARRELS
H.J. STRUTH
1929
1930
1931

MARKET SECTION

mately 11,500,000 gallons daily, a gain over the previous year of about nine per cent.

California led all states in natural gasoline production with a total output for 1930 of 829,713,000 gallons; Oklahoma produced 591,194,000 gallons; Texas production amounted to 491,299,000 gallons. These three states lead all others by a wide margin in the annual production rate.

Crude Stocks in Interior Texas Totals 60,632,300 Barrels

Fort Worth, Texas.—Crude stocks at the principal storage centers in the interior of Texas were estimated at 60,632,300 barrels on November 1, or 17,539,000 barrels less than the total on hand in the same areas at the beginning of the year. West Texas was the heaviest contributor to this decline, having decreased 7,841,500 barrels during the 11-month period, while the Panhandle registered a decline of 6,738,000 barrels during the same period. A portion of the storage oil moved from the above two districts has been halted in transit to the Gulf Coast at tank farms in North and Central West Texas and also the Mexia area.

Comparison of crude stocks at the principal concentration points in the interior of Texas as of January 1, 1931, and November 1, 1931, follow:

District—	Crude Stocks 1-1-31	Crude Stocks 11-1-31
West Texas	31,341,500	23,500,000
North-Central West Texas	14,579,000	13,544,000
Panhandle	17,138,000	10,400,000
Mexia	8,902,500	7,063,900
Corsicana-Powell	2,037,000	1,512,400
East Texas		2,129,900
Luling	4,173,300	2,482,100
Total	78,171,300	60,632,300

Standard Oil Dividends Off 23 Per Cent

New York.—Dividend payments of the Standard oil group of companies for 1931 will amount to $220,739,182, compared with $286,526,728 in 1930, according to a report issued by Carl H. Pforzheimer and Company, specialists in Standard oil securities. The decline under last year's dividend payments by this group amounts to $65,927,546, or approximately 23 per cent. The 1931 payments, while lower than in 1930, exceed those of 1928 by approximately $2,000,000.

Two companies accounted for more than one-third of the total decline in payments for 1931. Imperial Oil, Ltd., in the final quarter of 1930 paid an extra dividend of 50 cents a share, or $13,278,748, while no extra was paid in the last quarter of 1931. Prairie Pipe Line Company paid $6,075,000 in dividends in 1931 against $20,250,000 in 1930, a decrease of $14,175,000. Ohio Oil Company discontinued payments on its common stock in the second quarter of 1931 as did Standard Oil Company of Kansas. Standard Oil Company (Indiana) reduced dividend payments in the third quarter one-half, from 50 cents a share quarterly to 25 cents a share. Socony-Vacuum Corporation in the final quarter of 1931 reduced the dividend to 25 cents a share against 40 cents a share paid in the third quarter, which was the initial dividend following the merger of Standard Oil Company of New York and Vacuum Oil Company. Standard Oil Company of New Jersey paid the same dividends in 1931 as in 1930, namely 25 cents extra and 25 cents regular each quarter, or $2.00 per annum. Standard Oil Company of California also made the same cash payments, $2.50 per share per annum, although the two per cent stock dividend which was distributed in the two previous years was not declared in 1931.

Cash dividend payments of the Standard Oil group for the fourth quarter of this year will amount to $48,530,230, compared with $51,263,688 in the second quarter and $83,047,644 in the fourth quarter of 1930.

New Orleans Plant Acquired By E. L. Chapman Interests

New Orleans.—Southport Refining Company's 5000-barrel daily capacity skimming and cracking plant, located in New Orleans, was acquired by the E. L. Chapman interests of Fort Worth, Texas, effective December 1, and will be operated on crude controlled by the new owners in the East Texas field and also the Urbana, Arkansas, district. The East Texas crude will be transported by tank cars from a rack in the Overton section of the East Texas field, while the Urbana crude will be moved by river barges to the plant.

Chapman has announced that U. S. Refining Company of Louisiana is being organized to operate the plant and to later engage in the retailing of refined products. The officers of the company are: E. L. Chapman, president; S. E. Wilson, Jr., vice president; and Mr. Gilbert, formerly with Kettle Creek Refining Company of El Dorado, Arkansas, secretary-treasurer. Gilbert is also to be plant superintendent.

Reeser Makes Statement On California Conditions

Los Angeles.—E. B. Reeser, head of Barnsdall Oil Corporation and formerly president of the American Petroleum Institute, issued a statement here in which he stated that the petroleum industry in California has just witnessed several very constructive developments. He stressed the importance of a movement to unitize the development of the Sespe zone at Elwood, where Barnsdall Oil Company and Rio Grande Oil Company operate jointly. In an interview, Mr. Reeser said:

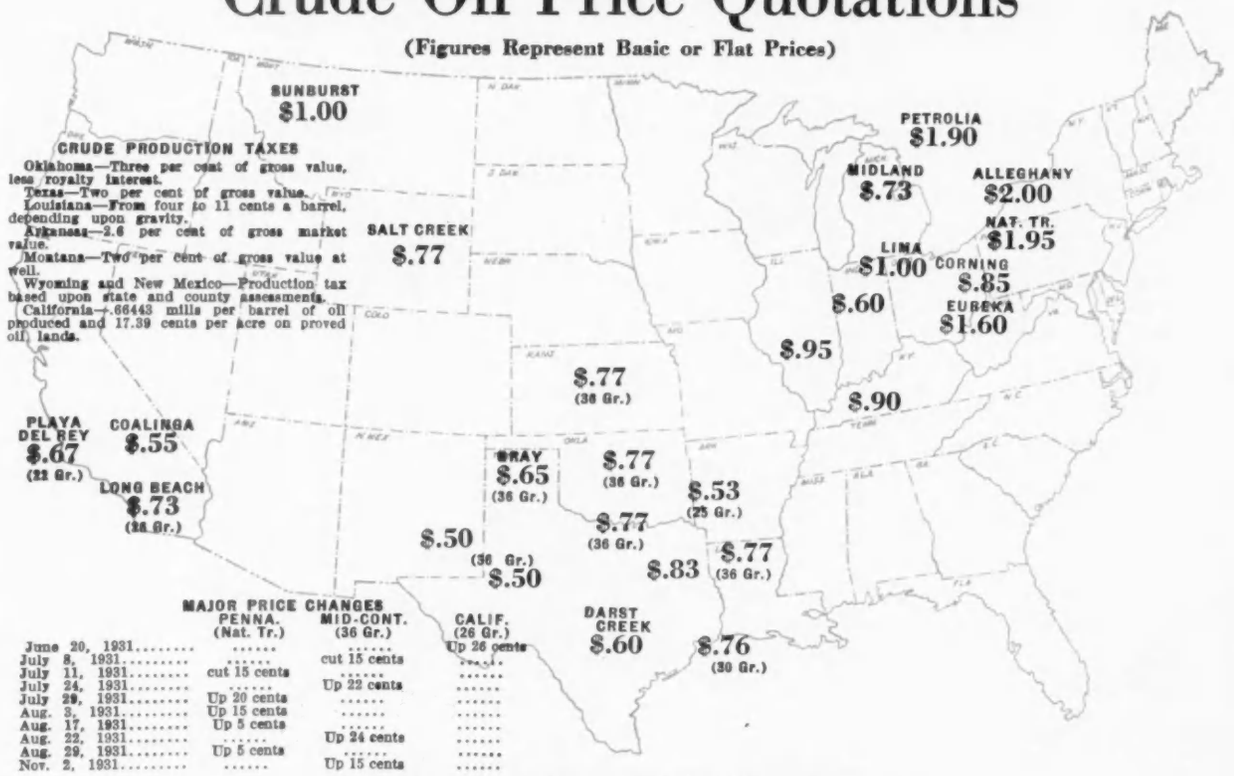
"The unanimous decision of the United States Supreme Court in an appeal of Bandini Petroleum Company and others against the enforcement of the California gas conservation law, is the most far reaching victory in the efforts to conserve petroleum and natural gas. It definitely decided that the gas law is legal in all its parts and implications including the gas oil ratio, and recognized the right of the state to regulate or restrict operations in the interests of the several owners in any field.

"The decision also appears to have covered the questions at issue in the Champlin case against the State of Oklahoma which will be heard before the United States Supreme Court within the next few weeks. In fact, Chief Justice Hughes has fairly well ended all debates with respect to the right of any state to conserve its natural resources.

"With the gas wastage question solved, the next, and perhaps most important step for the petroleum industry is to push forward unitization of development in all new areas. There are those who oppose unitization, but a large percentage of the operators recognize the advisability of dis-

Crude Oil Price Quotations

(Figures Represent Basic or Flat Prices)



CRUDE PRODUCTION TAXES

Oklahoma—Three per cent of gross value, less royalty interest.
Texas—Two per cent of gross value.
Louisiana—From four to 11 cents a barrel, depending upon gravity.
Arkansas—2.6 per cent of gross market value.
Montana—Two per cent of gross value at well.
Wyoming and New Mexico—Production tax based upon state and county assessments.
California—.66443 mills per barrel of oil produced and 17.39 cents per acre on proved oil lands.

MAJOR PRICE CHANGES

	PENNA. (Nat. Tr.)	MID-CONT. (36 Gr.)	CALIF. (26 Gr.) Up 26 cents
June 20, 1931	.....	.....	.....
July 8, 1931	.....	cut 15 cents	.....
July 11, 1931	cut 15 cents	.....	.....
July 24, 1931	.....	Up 22 cents	.....
July 29, 1931	Up 20 cents	.....	.....
Aug. 3, 1931	Up 15 cents	.....	.....
Aug. 17, 1931	Up 5 cents	.....	.....
Aug. 22, 1931	.....	Up 24 cents	.....
Aug. 29, 1931	Up 5 cents	.....	.....
Nov. 2, 1931	.....	Up 15 cents	.....

Official Postings and Differentials

(Revised to December 1, 1931)

California: (Effective June 19, 1931.

Signal Hill, Seal Beach and Alamitos Heights: 14 to 22.9 gravity 65 cents; 23 gravity, 67 cents with differential of two cents for each degree upward. Top price for Signal Hill, 30 gravity, 81 cents; top price Seal Beach and Alamitos Heights, 27 gravity, 75 cents.

Huntington Beach: 14 to 21 gravity, 65 cents; 22 gravity, 66 cents with differential of two cents for each degree upward. Top price, 27 gravity, 76 cents.

Inglewood: 14 to 19.9 gravity 65 cents; 20 gravity 66 cents with differential of two cents for each degree upward. Top price, 25 gravity 76 cents.

Playa Del Rey: 19 to 20.9 gravity 65 cents with differential of one cent for each degree upward. Top price, 25 gravity, 70 cents.

Olinda and Brea Canyon: 14 to 19.9 gravity 65 cents; 20 gravity 66 cents; 21 gravity 67 cents; 22 gravity 68 cents with differential of two cents for each degree upward. Top price, 28 gravity, 80 cents.

Coyote Hills: 14 to 22.9 gravity 65 cents; 20 gravity 66 cents; 21 gravity 67 cents with differential of two cents for each degree upward. Top price, 28 gravity, 79 cents.

Santa Fe Springs: 24 to 26.9 gravity 65 cents; 27 gravity 68 cents; 28 gravity 71 cents; 29 gravity 73 cents; 30 gravity 75 cents; 31 gravity 78 cents; 32 gravity 80 cents; 33 gravity 83 cents; 34 gravity 85 cents; 35 gravity and above 87 cents.

Whittier, La Habra and Montebello: 65 cents a barrel.

Torrance: 14 to 21.9 gravity 65 cents with differential of one cent for each degree to 25 gravity and two-cent differential for 25 gravity. Top price, 25 gravity, 70 cents.

Richfield: 14 to 20.9 gravity 65 cents; 21 gravity 66 cents with differential of two cents for each degree upward. Top price, 25 gravity, 74 cents.

Elwood: 33 gravity 79 cents; 34 gravity 81 cents with differential of three cents for each degree upward. Top price, 36 gravity, 87 cents.

Newhall, McKittrick and Kern River: 55 cents a barrel.

Midway-Sunset, Elk Hills and Buena Vista Hills: 14 to 21.9 gravity 55 cents; 22 gravity 56 cents; 23 gravity 58 cents; 24 gravity 61 cents; 25 gravity 64 cents; 26 gravity 66 cents; 27 gravity 68 cents; 28 gravity 71 cents; 29 gravity 74 cents; 30 gravity 76 cents.

Los Hills: 14 to 20.9 gravity 55 cents; 21 gravity 57 cents; 22 gravity 59 cents; 23 gravity 60 cents; 24 gravity 62 cents; 25 gravity 64 cents; 26 gravity 66 cents; 27 gravity 67 cents; 28 gravity 69 cents; 29 gravity 71 cents; 30 gravity 72 cents.

Coalinga: 14 to 24.9 gravity 55 cents; 25 gravity 57 cents.

Wheeler Ridge: 55 cents a barrel.

Athens, Dominguez and Rosecrans: 24 to 24.9 gravity 69 cents with differential of two cents for each degree upward. Top price, 34 gravity, 89 cents a barrel.

Oklahoma, Kansas, North Texas (Effective November 2, 1931). Flat Prices.

Oklahoma: Cushing, Yale, Oklahoma City, Morrison, Wewoka and Seminole: 83 cents a barrel; **Cement, Duncan, Walters:** 75 cents a barrel; **Healdton:** 52 cents a barrel; **Hewitt and Graham:** 67 cents a barrel.

North and Central Texas: Burkburnett, Archer, Stephens, Henrietta, Electra, Comanche and Olden: 83 cents; **Mexia, Wortham, Corsicana Light, Panola County and Lytton Springs:** 79 cents; **East Texas:** 83 cents. **West Texas:** 50 cents; **Panhandle (Gray County):** 73 cents; **Carson and Hutchinson Counties:** 66 cents. **Mirando crude:** 75 cents; **Darst Creek:** 60 cents; **Corsicana Heavy and Luling:** 49 cents.

Gravity Scale Prices: Below 29 gravity: 61 cents, with differential of 2 cents for each degree to 40 gravity and above which is posted at 85 cents.

Texas Panhandle: (Effective November 2, 1931)

Gray County: Below 35 gravity: 61 cents, with differential of 2 cents for each degree to 40 gravity and above which is posted at 73 cents.

Carson and Hutchinson Counties: Below 35 gravity: 56 cents with differential of 2 cents for each degree to 40 gravity and above which is posted at 68 cents.

West Texas: (Effective November 2, 1931).

Crane-Upton, Crockett, Ector, Howard-Glasscock, Pecos and Winkler Counties, Texas, and Lea County, New Mexico: 50 cents a barrel.

Southwest Texas: (Effective November 2, 1931)

Refugio: Heavy: 75 cents.

Refugio, Light: (Same as Gulf Coast—see below.)

Gulf Coast: (Effective November 2, 1931)

Goose Creek, Hull, Liberty, Orange, Pierce Junction, Mykawa, Moss Bluff, Raccoon Bend, Barbers Hill, Sour Lake, Spindletop, Sugarland, West Columbia, Humble and Refugio Light: Below 25 gravity: 70 cents, with differential of 1 cent for each degree to 40 and above which is posted at 86 cents.

Mirando: 75 cents; **Salt Flat:** 60 cents; **Darst Creek:** 60 cents; **Pettus:** 85 cents; **Markham:** 67 cents.

East Texas (Effective November 2, 1931)

Flat Price 83 cents.

North Louisiana and Arkansas: (Effective Nov. 4, 1931).

Caddo, Homer, Haynesville, Bull Bayou, Sabine, Cricton, De-Soto, El Dorado, Cotton Valley, Sarepta, Cartersville: Below 25 gravity 53 cents with differential of 2 cents for each degree beginning with 25 gravity and ending with 40 and above. Top price 85 cents a barrel.

Smackover: 55 cents.

Rocky Mountain States: (Effective Nov. 3, 1931).

Salt Creek: Below 29 gravity 61 cents; 38 gravity and above 71 cents a barrel.

Elk Basin and Grass Creek: $1.05; **Big Muddy:** 83 cents; **Lance Creek** $1.20; **Rock Creek:** 85 cents; **Sunburst:** $1.00; **Osage:** 98 cents; **Cat Creek:** 65 cents; **Pondera:** 70 cents; **Hogback, New Mexico:** 72 cents.

Eastern States: (Effective November 3, 1931)

Lima: $1.00; **Indiana:** 60 cents; **Illinois:** 95 cents; **Princeton:** 95 cents; **Wooster:** $1.15; **Western Kentucky:** 90 cents.

Pennsylvania: (Effective November 1, 1931)

Bradford District: $2.00; **National Transit Oil:** $1.95; **Southwest Pennsylvania Pipe Line oil:** $1.70; **Eureka Pipe Line Oil:** $1.60; **Buckeye Pipe Line Oil:** $1.50; **Corning crude:** 80 cents.

Michigan: (Effective Aug. 22, 1931). **Midland: 73 cents a barrel. Muskegon:** Same posting as Mid-Continent; **44 cents to 70 cents a barrel.**

Canada: (Effective Nov. 3, 1931).

Petrolia: $1.90; **Oil Springs:** $1.97.

continuing wild drilling orgies. Each new area presents problems of its own, but every one of them can be solved on an equitable basis if those interested enter into the study of the question and fairly consider the advantages as compared with the disadvantages.

"At present it is extremely desirable to unitize the Sespe zone at Elwood. The Barnsdall and Rio Grande companies will submit a plan to the other operators in the field at a meeting to be held on Monday afternoon, November 30. Every oil producer in the state should be interested in the study of the Elwood problem and lend their support, in an effort to control the drilling in what promises to be a prolific producing area.

"The tentative report of the economic committee of the state on the question of allowable production over the next period is important. Great progress has been made toward balancing supply and demand, and the effort to continue this work holds out the only hope for obtaining better prices for petroleum and its products. It is reasonable to expect that the demand over the next few months will be less than it has been through the past six months. The economic committee has undoubtedly given careful study to the requirements, and its recommendations should be recognized as being as nearly correct as it is possible to reach. It will be more profitable to produce somewhat less than is required than to add to the present excessive stocks."

Probable Ultimate Gas Demand Double Present Consumption

Pittsburgh.—In his recent address before the Third International Conference on Bituminous Coal at the Carnegie Institute of Technology, George I. Rhodes, vice president of Ford, Bacon and Davis, New York, discussed the rapid rise of the natural gas industry to its position as a major competitor of bituminous coal.

In developing his subject, Mr. Rhodes pointed out that pipe lines now under construction or placed in operation since 1929, have an aggregate daily capacity of about one billion cubic feet, and that when these lines are loaded to capacity, there will be a further annual consumption of about two-hundred and fifty billion cubic feet, or an increase of approximately 25 per cent.

"Gas fields," he said, "will support such increased consumption of natural gas for a sufficient period to attract new capital. Unless, however, there are important discoveries of new reserves, it is difficult to see how new lines can be justified which will increase the consumption of the fuel to more than about double its recent maximum."

Beaty Discusses Problems Of Oil Industry at Dallas

Dallas, Texas.—In an address delivered here Tuesday night, December 1, before the Dallas Chamber of Commerce in annual session, Amos L. Beaty, president of the American Petroleum Institute, discussed "some Problems of the Day, and In Oil."

Tracing the development of the Machine Age and overproduction in all industries, Mr. Beaty admitted the inevitability of economic cycles, even in the petroleum industry where consumption is so clearly definable. However, he asked for a revision of old theories, and pointed out that in continuing to accept the law of supply and demand, something ought to be done about the cause factor which, he said, may mean a change in the written law.

In discussing conservation and prices, Mr. Beaty pointed out that valorization is a doubtful expedient, and in the case of petroleum, the remedy is not valorization at all but rather conservation. He discussed the subject of economic waste, and pointed out that over-production and economic waste are far more serious than restricted production and inflation. To replace economic waste, Mr. Beaty asked for further development of scientific recovery methods and the spread of orderly production.

Mr. Beaty defended martial law and said that the industry owes a debt of gratitude to Governor R. S. Sterling for his courage and wisdom. In this connection, he added that the industry is not inert, but is doing a lot of thinking and planning.

The speaker pointed out that there is little hope of an immediate abatement in station construction, and that refinery output would decline as profits decline. However, he stressed the alarming development of bootlegging in the sale of gasoline. He described the several ways of evading the tax and pointed out that it is one of the most serious menaces that confronts the industry.

Dallas, Texas.—Magnolia Petroleum Company has received confirmation from the Navy Department at Washington of the award of contract to supply approximately 594,000 barrels of grade C bunker fuel oil at $323,800. Deliveries are to be made in Texas and Gulf Coast ports between January 1 and June 30, 1932.

Mid-Continent Section, A. P. I. Production Program Announced

Drumright, Okla.—The fall meeting of the Mid-Continent section, American Petroleum Institute, division of production, will be held on Friday and Saturday, December 11 and 12, at the Roberts hotel in Drumright. W. K. Whiteford, chief petroleum engineer for Barnsdall Oil Corporation and chairman of the Mid-Continent section, has announced the following program:

Friday, December 11: 10:00 a. m. Welcome, W. K. Whiteford.

Report on activities of district chapters (Drumright, Seminole, Burbank and Tonkawa), D. L. Trax, Gypsy Oil Company.

"Progress in the Oil Industry," H. M. Stalcup, Skelly Oil Company.

"Economic Review of the Oil Industry," C. B. Mapes, Mid-Continent Oil and Gas Association.

12:00. Luncheon.

1:30 p. m. "Stabilizing the Oil Industry," Earl Oliver.

"Some Problems of the Oil Industry," E. R. Filley, The Texas Company.

"Factors Influencing Oil Well Potentials in Oklahoma City," C. C. Rae, Skelly Oil Company.

"Well Spacing," K. C. Sclater, petroleum engineer.

6:30 p. m. Banquet, Cushing, Oklahoma. Speakers, George H. Jennings, state senator from Creek and Payne Counties; L. E. Smith, National Petroleum News; Frank Carruthers, Norvell and Wilder, Houston, Texas.

Saturday, December 12, 9:00 a. m. "American Petroleum Institute Activities," Carl Young, A. P. I., Dallas.

"Oil Field Transportation Problems," E. L. Bell, Deep Rock Oil Corporation, Drumright.

"Flowing Small Wells," (abstract), R. R. Hawkins, The Texas Company.

"Hoisting Equipment for Servicing Wells," L. A. Cook, Shell Petroleum Corporation.

"High Pressure Well Connections," R. W. Bond and Wallace Collins, Shell Petroleum Corporation.

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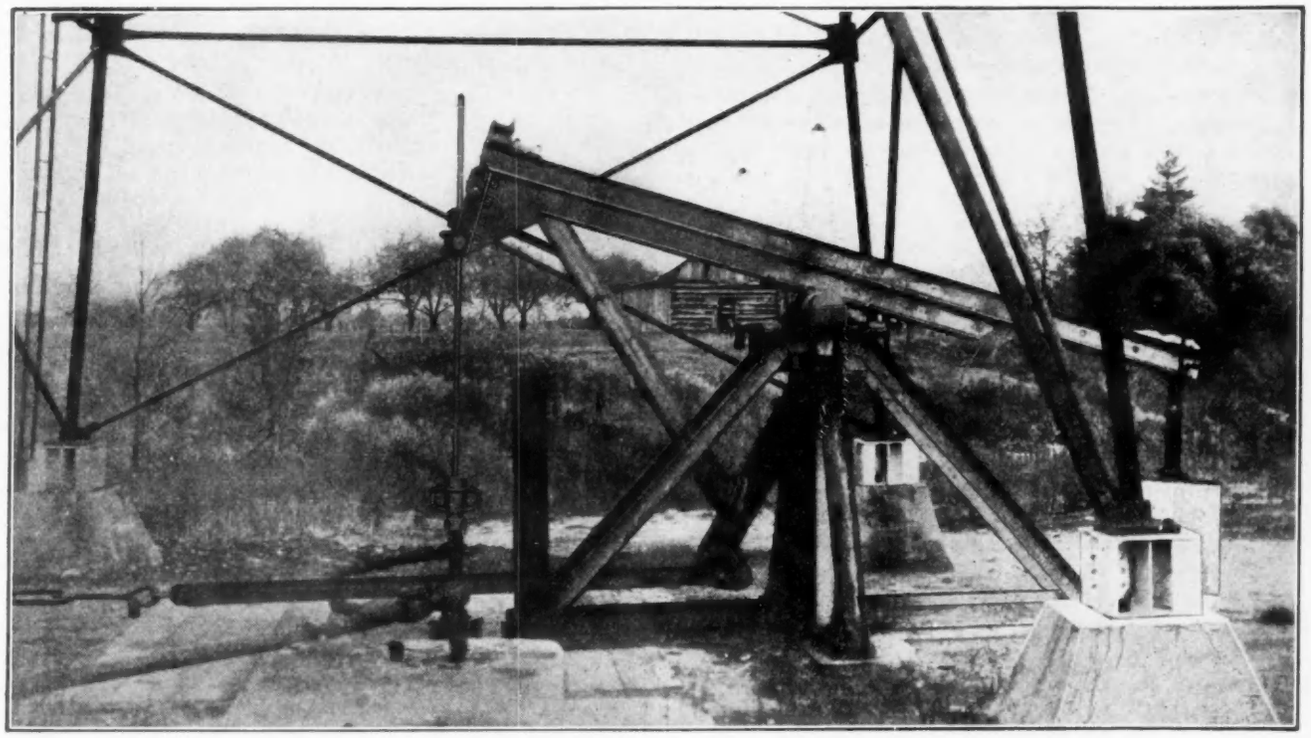

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This line meets every pumping requirement of wells from the shallowest to those over 4000 ft. in depth.

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THE NATIONAL SUPPLY COMPANIES

Interstate Oil Compact and Tariff Linked in Proposal to Next Congress

TULSA.—Both a tariff on petroleum imports and an interstate oil compact will be asked when the next congress meets in December.

The two may be woven into one piece of recommended legislation, for Cicero I. Murray, chairman of the Oil States Advisory Committee, said in Tulsa Monday that the compact legislation would be placed before congress, which would be asked to give a binding agreement which would take care of oil imports.

Wirt Franklin, president of the Independent Petroleum Association of America, said that the hardest fight ever put up in behalf of a tariff would be made before this congress. It was Franklin who led the tariff fight two years ago. At that time the petroleum industry was not "given a chance" when its special train left Tulsa for Washington. But the effort came closer to success than even its most ardent advocates hoped for and even those who were luke warm were surprised at the strength of the oil tariff seekers.

Since then the course of tariff need has been over rough ground. The end of the last congress saw several members from Kansas refuse to participate in the Republican caucus, for the reason that they were disappointed over the attitude of other party members concerning an oil tariff. Directors of the American Petroleum Institute gave a majority vote in favor of a tariff at Chicago last month. This vote is being completed by mail and final results are not yet known.

Congressional "Oil Bloc"

Indications are now that the coming congress will muster an "oil bloc." Senator Capper of Kansas and Senator Thomas of Oklahoma are the outstanding tariff advocates in the senate. Over in the House of Representatives, the oil tariff will have the support of the belligerent delegation from Kansas, as well as that from Oklahoma and Texas is counted upon to throw its weight over into the tariff column.

All of these elements will be pitted against the senators and congressmen from the New England states. Much of the work since the last congress has been toward the conversion of New England in its attitude toward an oil tariff. The program has been along the line of showing that New England's cotton mills and shoe factories are idle because the oil producers and royalty owners of the southwest have no money to buy these products.

Since the last congress adjourned, two cargoes of foreign gasoline have touched North American ports. There have been far more than two but these two resulted in much fuel to the flame in behalf of an oil tariff.

If a dozen tankers of gasoline from these two countries had been docked at American ports in the past year, the advocates of an oil tariff would likely sail through to their goal with little effort, for these shipments made far more impressive tariff pleas than a hundred tankers of South American crude oil or gasoline. But only the two have come into this country and students of oil movement do not believe there is likelihood that either Roumania or Russia will come to be serious shippers of gasoline to the United States.

The fight for the oil tariff will center around the Independent Petroleum Association of America. Russell B. Brown, counsel for the organization, is now in Washington and will remain there until a vote has been taken on the question. Wirt Franklin, president of the organization, will be in Washington in time to take part in directing the fight. While there will not be any special train of tariff advocates, there will be delegations and individuals in Washington to assist in the work.

If the tariff and the oil compact should go before congress in one bill, the two will make strange companions, for the present effort to gain a tariff on crude oil and gasoline grew out of opposition to an Interstate Oil Compact. At Colorado Springs, June 10, 1928, Mark L. Requa outlined the provisions for an Interstate Oil Compact. It met with a rebuke that was almost beautiful in its frigid front. Before the oil producers who went there checked out of their hotels they held a meeting and the tariff fight was started and the Independent Petroleum Association of America formed.

Requa brought the idea of the Interstate Oil Compact before the petroleum industry as a wish of the administration of President Hoover. Dr. Lyman Wilbur, Secretary of the Interior, was there to speak in its behalf, also was Dr. George Otis Smith. But the petroleum industry wanted no compact then and left the impression that it never would want such a federal statute.

But just as there has been a change in the attitude toward the tariff there has been a change in the attitude toward the compact. Executives of some of the intergrated oil concerns have spoken in behalf of a compact and those who have worked to gain ground with proration have come to wonder if such a measure would not give a uniformity to state control.

If a statute creating a compact for the control of oil production is passed by congress, it will then become the task of some organization to have the oil producing states adopt legislation to put the compact to work. Cicero I. Murray, cousin of the Oklahoma Governor and chairman of the Oil States Advisory Committee, is one of those who is advocating the compact. No doubt this body will undertake to have state legislation passed to make such a compact effective.

Independent Association Plans Oil Tariff Demand on Congress

Washington, D. C.—Plans for the presentation to congress at the opening of the session next month of a renewed demand for a tariff of $1 per barrel on crude oil and 50 per cent ad valorem on refined products are now being made by representatives of Independent Petroleum Association at headquarters opened here this week by Russell B. Brown of Tulsa, counsel and executive manager of the organization.

Independent producers, Mr. Brown declared, in discussing the plans of his organization, feel that they have a

Sun Oil Co's. Gasoline Lines conquer difficult topography

THE Sun Oil Company's new gasoline lines, one extending from Marcus Hook, Pennsylvania, northward to Syracuse, New York, and the other from the same point westward via Pittsburgh to the Great Lakes, encountered their full share of difficulties of construction. Some of the country traversed is quite broken, very rugged and includes several river crossings, mainly, the Susquehanna and Allegheny, the latter being crossed four times. The elevations vary from near sea level at Marcus Hook, the Company's refining center, to almost 3,000 feet at Ligonier, Pennsylvania. When the pressure is 600 pounds at Chambersburg, it mounts to 900 pounds at Lovely Station, further west on the line.

So sound were the measures taken and so thorough the workmanship applied, that when the 57,000 welds in the line running west, were tested with water at 1,200 pounds pressure, not a single leak developed.

For the major part of this important enterprise the choice was NATIONAL Pipe. The confidence of engineers in NATIONAL for all such undertakings is sustained by abundant records of successful service in the most trying uses. Year by year it holds its place as—

America's Preferred Line Pipe

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NATIONAL PIPE

good chance of getting an oil tariff at the coming session in legislation designed to amend the "glaring inaccuracies" of the Hawley-Smoot tariff law, one of which is asserted to be the retention of oil on the free list. On the other hand, congressional leaders have been represented as not expecting any attempt to write a new tariff law with a presidential election so near in the future.

"We do not anticipate the opposition from New England which we encountered in the past," Mr. Brown stated. "They have felt the effects of the depression in the Southwest, through lack of a market for their goods. There are some 300,000 oil industry workers out of employment, and they have been the best buyers of New England manufactures."

Indorsement of the principle of a tariff on oil adopted by the board of directors of the American Petroleum Institute at Chicago, he asserted, definitely places the oil industry on record. The resolution was introduced by Wirt Franklin of Oklahoma City, head of the independents, and the only opposition, Mr. Brown declared, was from the importing companies.

"The voluntary reduction in imports has aided the domestic producers," he continued, "but they have not reduced refined product importations in proportion to the reductions in crude. This situation does not bring anything like a full measure of relief, for there is still sharp competition due to the processing of foreign crude which, we think, belongs to the domestic market."

No increase in the price of domestic oil to the full amount of the proposed $1 a barrel duty is expected to follow the adoption of the tariff by congress, the oil man asserted, but the chief benefit will be in allowing the domestic producer to plan his business. A number of areas in the country could be developed, he explained, if the producer could be assured that his investment would not be wiped out by wholesale importations.

"Very little of the increase that the domestic producers obtain by a tariff would be added to what the consumer pays for gasoline," he said. "Gasoline is abnormally low now and the price will probably increase. The low price is not due to the low price of crude, as will be urged, but largely is the result of competition within the industry in seeking new marketing outlets."

Further Reduction in Production Quotas Suggested by Tulsa Conference

TULSA.—Another substantial reduction must be made in the oil output of Kansas, Oklahoma and Texas if waste, both economic and physical, does not overtake the petroleum industry early in 1932. This was the concensus of an informal conference here Monday. As a move toward bringing about such a reduction a program of further curtailment was suggested, giving Kansas 100,000 barrels per day; Oklahoma, 500,000 barrels; and Texas, 825,000.

This program stands only as a suggestion. Thurman Hill, public service commission member from Kansas, said that he believed such a program could be adopted for Kansas. Paul Walker, chairman of the Oklahoma Corporation Commission, made no statement concerning any similar action by that body but did report that the Oklahoma body will hold a hearing December 8 and that evidence could be introduced at that time.

Texas was not represented at the conference. The greater part of consideration was given to the problem of gaining the support of Texas in the campaign to bring field output within current requirements.

It developed at the conference that both Oklahoma and Kansas had kept oil output well below the figures set at a similar conference in Oklahoma City, September 11, while Texas, whose output was estimated at 902,000 barrels per day, had run close to 1,000,000 barrels per day.

Plea to Texas

The statement given the press following the conference was in effect a plea addressed to the oil producers of Texas to the effect that failure to hold output in that state is the cloud hanging over the crude oil price structure today. Since the conference was without authority to pledge any governmental body to change orders of proration, the meeting was without tangible results.

Amos L. Beaty, president of the American Petroleum Institute, was among those present. He said he had no doubt that there was too much production of both crude oil and gasoline and that he further had no doubt that there was physical as well as actual waste in the petroleum industry of the Mid-Continent area today. He said the condition would bring trouble unless corrected.

William N. Davis, president of the Mid-Continent Oil & Gas Association, took the last reports of the economics committees of both the American Petroleum Institute and the Federal Oil Conservation Board as the basis for recommending further reduction in crude oil output. He recalled the fact that most of the moves that have been made toward curtailment have stopped just short of what was actually needed to bring permanent betterment.

"We should go the limit within the laws of these states," he added.

Here Judge Beaty interposed a remark to the effect that a half million barrels of production taken away would be

Austin, Texas.—It has been reported that, pending the completion of a tri-state proration plan, such a plan will be presented to the Texas Railroad Commission and Governor Ross Sterling, who rescinded his earlier order changing the East Texas proration basis from 125 to 110 barrels per well daily.

Commissioners Terrell and Smith have stated that they will not issue orders further curtailing production of fields under the control of the commission without another public hearing. Therefore East Texas, which is under the sole control of Governor Sterling, is the only field which can be allied in a plan looking to an adjustment among Texas, Oklahoma and Kansas fields.

of material benefit. "Otherwise," he added, "we are not going to get anywhere until nature takes care of curtailment. We seem to accept just enough curtailment to keep us where we are. What we need is sufficient reduction to make conditions better."

Thurman Hill, who called the conference and acted as chairman, said he felt confident that Kansas would come into a reduction of 10 per cent in output, provided both Oklahoma and Texas would contribute similar reductions.

Paul Walker, chairman of the Oklahoma Corporation Commission, said that he had hoped that the conference would take up the question of the three states adopting somewhat similar methods of enforcing proration. He said that the taking of potential output in the Oklahoma City pool in the past month had been the cause of the waste of sufficient gas to have produced hundreds of thousands and perhaps millions of barrels of crude oil.

Cicero I. Murray, chairman of the Oil States Advisory Committee, brought the question of a permanent control of production by states into the discussion when he said that an effort would be made at the coming session of congress to have a federal statute providing an interstate oil compact and binding congress to take care of oil imports.

Murray called attention to difficulties in Texas, due to the fact that the market demand for East Texas oil is now greater than actual output. He said it was fortunate that the proration orders of Texas are not based upon market demand, which he believed would be close to 600,000 barrels daily.

At the conclusion of its deliberations, the conference issued the following statement:

Statement

"The oil industry is again facing a serious situation. More oil is being produced and taken from American farms than can be absorbed by the market. If this condition continues for 60 days crude oil will again be selling for a song. The American fields are producing about 2½ million barrels of oil per day and the demand for refined products is about 2,200,000 barrels per day. The addition of 200,000 barrels per day to the already over-loaded stocks can only result in one thing—demoralization.

"Therefore it is up to the producers of Texas, Oklahoma and Kansas to cut production down to conform with consumption—it is the only common sense thing to do. If this is not done, all the splendid work toward stabilization of crude will be lost. Oil in Texas will again sell for 10 cents per barrel and in Oklahoma and Kansas at 20 cents. A blind producer should be able to see what orderly curtailment has done for his pocket book. No state has profited more than Texas by curtailment. The people of Texas owe a debt of gratitude to Governor Sterling for restoring order out of chaos in Texas oil fields. By his courageous action since last spring, he helped advance the price of crude oil in that state from 10 cents to 65 cents. This advance has added $750,000 per day to the income of the people of Texas, or more than 20 million dollars per month.

"Apparently a small selfish group of Texas oil producers are determined to wreck the market by hampering and hindering the governor in his efforts towards stabilization. They have never reduced production to 902,000 barrels, being the allowable determined to be fair for that state, and now in face of a lessened demand, are crying for removal of restrictions. This narrow view on the part of this minority in Texas, is working a grave injustice to Kansas and Oklahoma. Both states have produced less than their allowables since the Oklahoma City conference. It has been done at a sacrifice; but it will be useless for Oklahoma and Kansas to continue to curtail oil production as long as Texas refuses to curtail in an equal degree and, as a result, absorb the oil markets of Kansas and Oklahoma.

"However, we believe the vast majority of Texans are behind Governor Sterling and willing to play fair with Kansas and Oklahoma; therefore, it is suggested, in order to conform to the prevailing rate of consumption, that allowable for Kansas be 100,000 barrels per day, Oklahoma 500,000 barrels per day, and Texas 825,000 barrels per day, beginning January 1, 1932.

"The oil producers in the Mid-Continent field cannot expect relief from congress against imports of crude and refined products unless the production in American fields is economically produced and marketed in an orderly fashion. Let us then get down to bed-rock—and make this small curtailment in order to permanently stabilize the oil industry in the United States."

Governor Says Proration Basis Not to Be Changed

Austin, Texas—Although Governor Ross Sterling has considered a multitude of plans for changing the proration basis in East Texas, he advised THE OIL WEEKLY Monday that, acting on advice from his representatives in the field, he has decided not to change the proration plan at this time.

The governor announced a reduction in the per well allowable at the same time but later rescinded his order supposedly to consider whatever action is taken by the meeting at Tulsa before making a change in East Texas.

Due to inclement weather, production in the East Texas area has not reached the 400,000-barrel mark, set as the dead line for the present order, and it is thought that as a result of the slackening in drilling operations this figure can not be reached for several weeks. Had the order cutting the per well allowable to 110 barrels from 125 barrels

Austin, Texas.—After changing the East Texas proration basis from 125 to 110 barrels per well daily, effective 7 a.m., December 2, Governor Ross Sterling rescinded his order, explaining that weather conditions in the East Texas area had made it impossible for military authorities to get around the field, since more than 10 inches of rainfall had been recorded in the general area, materially retarding drilling activities.

As a result production has not yet reached the 400,000-barrel limit due to delays in completions incident to weather conditions, and it is considered likely that production may not reach the limit set by the governor for some time.

Furthermore it has been pointed out that a reasonable delay will permit the conference at Tulsa to be completed and allow consideration of any plan that may be evolved at that meeting. In the meantime production will automatically be held down to approximately the present level by weather conditions in the East Texas area.

gone into effect the area would have had a possible output of 360,000 barrels with present completed wells.

At the Tulsa meeting the feeling was expressed that the allowable in every state should be reduced, that particularly should the allowables in Texas, Oklahoma and California be reduced. Asked if he thought that East Texas should have an additional cut, based on the wells now in, Governor Sterling said that he did not think so.

Governor Sterling was asked particularly about a plan devised by certain North Texas operators for distributing production allowable on tracts of various acreage. This plan sets up a fixed allowable based on both the size of the tract involved and the number of wells on the tract. The allowable suggested ranged from 80 barrels for one well on a 10-acre tract to 400 barrels for one well on a 100-acre tract; each additional well is to be given 35½ barrels.

The plan further suggests the establishment of a court of equity under the military with a judge advocate presiding to perfect and apply separate rules and allowances for "hot spots" or areas that include many small and closely drilled leases.

Governor Sterling expressed the thought that this plan might be a good one, but that his advisors in the field felt that inasmuch as the operators are thoroughly acquainted with the present basis, it would be best to continue it.

Navy Secretary Reports On Oil Naval Reserves

Washington, D. C.—Conditions on the naval oil reserves during the fiscal year ended June 30, last, are discussed by Secretary of the Navy Charles Francis Adams in his annual report, just made public.

No expenditures have ever been made, or are contemplated in the future, from the fund appropriated by congress to enable the department to protect Reserve No. 1 by drilling wells and performing incidental work if satisfactory agreements can not be made with adjoining landowners not to drill offset wells for the purpose of producing oil. Up to $10,000,000 is available for this purpose at any time defensive drilling becomes necessary.

No new wells were drilled on the leased area in Reserve No. 1 during the year, the report shows. At the close of the year there were 52 wells on production and 20 shut down. On the patented area there were 43 oil and seven gas wells, 24 of the oil wells being on production and all others shut in. The production from the leased lands during the year was 2,470,563 barrels of oil, 1,725,458,000 cubic feet of gas and 2,979,123 gallons of gasoline, the Government's royalties amounting to $705,307.25.

On the unleased area there are 21 oil and two dry gas wells, the latter offsetting two similar wells operated by Standard Oil Company of California and by contract with Southern California Gas Company approximately equal amounts are taken from each group of wells. The oil wells have been shut in since April, 1927.

Private holders of land in Reserve No. 2 had 241 oil wells on production at the end of June, while 287 oil and 17 gas wells were shut in. No new wells were drilled during the year. On the leased land there were 170 oil and two gas wells on production and 155 oil and 15 gas wells shut in. Production from the leased land during the year was 3,078,369 barrels of oil, 8,354,487,000 cubic feet of gas and 19,906,491 gallons of gasoline from which the government received $570,561.52 in royalties.

Reserve No. 3 is shut in and is to be kept so until a national emergency may require production, the report states. There has been no production since the end of 1927, when the receivership incident to the litigation with Mammoth Oil Company was completed. Reserve No. 4 in Alaska has never been exploited.

Clyde M. Bennett One of Three New Magnolia Vice Presidents

Dallas, Texas.—A trio of vice-presidents added by Magnolia Petroleum Company includes two veteran employees of its production department and a former department head of Vacuum Oil Company, which merged with the Standard Oil Company of New York, July 30, to become Socony-Vacuum Corporation.

Adhering to its policy of picking officers from the ranks of employees, Magnolia Petroleum Company elected Mark J. McLaughlin and C. L. Gladden, both of whom are assistant managers of the production department, as vice presidents.

Selection of Clyde M. Bennett of New York and Houston, who has been general manager of the crude oil department of Vacuum Oil Company, also as a vice president precedes the absorption by Magnolia Petroleum Company of the production, pipe line and crude buying and selling branches of the old Vacuum Oil Company. Bennett will be transferred to Dallas to serve as assistant manager of production.

McLaughlin has been actively in charge of the production department for Magnolia Petroleum Company since the first of the present year as a result of Frank V. Faulkner, general manager, having accepted semi-retirement to travel. McLaughlin made his start in the oil industry as a roustabout with the South Penn Oil Company in West Virginia, and served as president of Fortuna Oil Company during the period that it was operated as a subsidiary of Magnolia Petroleum Company. He was elected a director of Magnolia Petroleum Company more than a year ago coincident with the semi-retirement of Mr. Faulkner.

Charles L. Gladden, superintendent in the Wewoka district, Oklahoma, was moved to Dallas general offices and assigned the duties of assistant manager of production.

Tyler, Texas.—Natural gasoline production from Humble Oil & Refining Company's two operating plants in the Rusk County section of the East Texas field is averaging about 15,000 gallons daily, and is being mixed with crude for movement via pipe line to the company's refinery at Baytown, Texas. This method of transportation materially increases the gravity of the crude, which averages from 39 to 39.5 gravity, according to samples from a number of the trunk lines, without the addition of the natural gasoline.

Beaumont, Texas.—Magnolia Petroleum Company is adding four 80,000-barrel steel storage tanks to its large tank farm located near the company's refinery at Beaumont. These tanks were formerly used in storing sulphur crude from West Texas fields at the company's Midland, Texas, tank farm, and tanks will require new roofs.

Oil and Gas Pipe Line Activities

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Line From East Texas to New Orleans Plant Rumored

Houston.—THE OIL WEEKLY has been unable to verify reports that Tex-York Utilities Company has acquired the Meraux refinery and other properties of the Sinclair Refining Company of Louisiana, located near New Orleans, and that plans are being considered for the construction of a 400-mile pipe line from East Texas to Meraux. Plans announced by the daily press call for the construction of a 12-inch line of 50,000 barrels daily capacity.

Negotiations for the deal with Sinclair have been conducted by Courtland Palmer Company, 26 Broadway, New York, of which Russian Count Ivan Leschinsky and Lawyer Courtland Palmer are president and secretary respectively.

The deal is reported also to involve 2700 acres of land with riparian rights on the Mississippi River and Lake Borgne, and three 5500-ton tankers formerly owned by the Sinclair Navigation Company.

Count Leschinsky is reported to have formerly been connected with Standard Oil Company of New Jersey abroad and Mr. Palmer with Standard Oil Company of New York. J. Whitt Gurley of Houston, formerly construction contractor for the Humble company is treasurer of Tex-York.

It is further reported that Tex-York will market its entire output abroad and is suggested that Mussolini or the Spanish Monopoly is behind the deal.

E. T. Carpenter, New Orleans, reported to be connected with Tex-York Utilities Company, was in Houston this week, and was reported to be interested in securing pipe line workers who were to be employed on the proposed line, in the event the company went ahead with it. He said that no decision would be made for about 10 days.

Leschinsky, interviewed in Shreveport recently, said that his company already has 1,000,000 barrels of oil in storage at Meraux. He also was reported to have said that his company might take other oil, if the right opportunity presented itself, by hook-ups between Kilgore in East Texas and Meraux.

Harry Sinclair Connelly, prominently mentioned in news dispatches in connection with the deal, is the 21-year-old son of W. L. Connelly of Sinclair Consolidated Oil Corporation and is stationed at Meraux as watchman for the properties there.

More Plans Revealed in Ajax Line Looping Project

Tulsa.—Despite refusal of officials of Ajax Pipe Line Company to verify rumors that construction will be started at an early date on 300 miles of 10-inch looping parallel to the present Glenn Pool to Wood River system, it was generally believed in Mid-Continent circles that the project would go through. Early reports stated that bids had been asked on a tonnage of 10-inch pipe equivalent to about 300 miles in length.

J. R. Doles, general superintendent of the line, with headquarters in Springfield, Illinois, denied that he had any definite information but stated he had heard a rumor that bids had been asked on the equivalent of about 700 miles of 10-inch.

Rumor further has it that a 10-inch line may be built from Wood River to Cleveland. According to the best information that can be had at this time the proposed line will not be in the form of looping but a new 10-inch paralleling the present double 10-inch carrier from Glenn Pool, Oklahoma, to Wood River, Illinois.

Movement started through the Ajax system early in December, 1930, and both lines are now carrying full capacity, which is about 60,000 barrels daily. Ajax Pipe Line Company, a subsidiary of the Standard Oil Company of New Jersey, is partly owned by the Standard Oil Company of Ohio, which recently acquired some new holdings among which it is understood were considerable marketing and some refining facilities.

Under the present hook-up Ajax Pipe Line Company delivers crude to Illinois Pipe Line Company at Wood River for relay to various Middle Western and Eastern points through the lines of the Buckeye Imperial and Tuscarodo Pipe Line Companies.

Due to the extensive Standard system eastward from Wood River, the rumor of a new line from that point to Cleveland does not seem well founded. Standard Oil Company of Ohio is receiving some crude from the Ajax line.

One interpretation being placed on the move to increase capacity from the Mid-Continent is that the Standard Oil Company of New Jersey sees the possibility of the passage of a tariff on foreign crude, a move which admittedly would increase the demand for Mid-Continent crude. Addition of a new 10-inch line parallel to the present Ajax system would add from 30,000 to 35,000 barrels daily to the capacity, bringing the daily total above 90,000 barrels.

Stanolind Line Loops Provide West Texas-Chicago Movement

Tulsa.—Routing of sulphur crudes from West Texas via Stanolind Pipe Line Company's Mid-Continent system to refineries of Standard Oil Company (Indiana) in the Middlewest is expected to get under way shortly after the start of the new year, or upon completion of a series of loops now being added by the former in its system north from Healdton, Oklahoma. Approximately 12,000 barrels of controlled production in West Texas held by Stanolind Oil & Gas Company is slated to be withdrawn from the market and diverted to the above mentioned refining organization, with gathering and transportation facilities from the various fields to Ranger district being performed by Humble Pipe Line Company on a common carrier basis. In addition to this crude the company can utilize the common carrier facilities of the same company in moving about 2300 barrels of controlled oil in the Texas Panhandle, and about 5000 barrels of daily production held by Midwest Refining Company, an affiliated concern, in the Hobbs field, New Mexico.

Withdrawal of Stanolind Crude Oil Purchasing Company and Stanolind Pipe Line Company as purchasers and trans-

(*Continued on page 62*)

Personal Mention—Men You Know

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E. A. SATCHELL, of London, head of the production department of Iraq Petroleum Company, Ltd., is visiting his company's operations in Iraq.

CHARLES POTTER, material man for Lago Petroleum Corporation at Maracaibo, Venezuela, is visiting friends in the Tampico district of Mexico, whence he will go to California for the remainder of his holiday.

GEORGE H. JAQUES, vice president and general superintendent for Midwest Refining Company, Denver, and Dr. F. R. Morton of Chicago, medical director for Standard Oil Company (Indiana), visited the Salt Creek field last week, where Dr. Morton inspected the company's fine hospital.

JOSEF KARL SCHOLS, manager of Nglobo Complex, Bataafsche Petroleum Maatschappij, Tjepoe, Java, left California recently for headquarters, via The Hague.

G. A. HOLLAND, representative of the Department of the Interior and a director of the U. S. Geological Survey, is looking after government interests in California.

HALE SOYSTER, head of the U. S. Geological Survey at Casper, Wyoming, has been visiting in California.

L. L. BRUNDRED, petroleum engineer, has returned to Los Angeles, following an extended Eastern trip. He has been appointed sales manager in Southern California for Spang Chalfant and Company.

PHIL F. MARTYN, district geologist with Houston Oil Company of Texas at Beeville, Texas, has been active in work undertaken jointly this year by the San Antonio Geological Society and Houston Geological Society to establish permanent nomenclature for fields in Southwest Texas and Texas and Louisiana Gulf Coasts. Mr. Martyn is a graduate of the Missouri School of Mines, 1923. He spent a year and a half at Fresnillo, Zacatecas, Mexico, doing silver mining work, then went to South America as geologist for Sun Oil Company in Venezuela. For the past six and a half years Mr. Martyn has been associated with the Houston Oil Company of Texas.

PHIL F. MARTYN

H. B. WEATHERBEE, district manager for A. M. Byers Company, with headquarters at Houston, is spending the week in Pittsburgh with the sales department of the company.

H. R. LOUDERMILK, vice president, Allsteel Products Manufacturing Company, Wichita, Kansas, was a visitor in Houston last week, attending and assisting in the demonstration sponsored by his company and Caterpillar Tractor Company.

WILLIAM J. SHERMAN, assistant to South Texas divisional manager of production for The Texas Company, recently returned from a vacation spent in Mexico.

R. C. GRINNELL, president of Fluid Packed Pump Company (Mid-Continent) spent the past week in Houston, out of his Oklahoma City headquarters. Poor flying weather forced him to leave his five-place Bellanca plane in Oklahoma City, a rare trip in his case since he has traveled exclusively in his own plane for several years.

JON R. LONG, general manager, Petroleum Equipment Company, Fort Worth, and Horrace Kime, general manager, Robinson Packer Company, Tulsa, spent the last two weeks of November deer hunting on their reserve near Fredericksburg, in Central Texas. Guests on the hunt during that period were John Meyers, sales manager, American Hammered Piston Ring Company, Baltimore, who killed his first buck; Paul Hubbard, chief engineer, Gulf Production Company, Houston; and O. Busby, Gulf's chief warehouseman in the Gulf Coast.

THE nominating committee of the California Oil & Gas Association has named the following men for the various offices during the ensuing year: J. A. Brown, General Petroleum Corporation, president; C. E. Olmsted, The Texas Company, vice-president; R. A. Broomfield, Barnsdall Oil Company, second vice-president; H. L. Westbrook, Belridge Oil Company, treasurer; and L. P. St. Clair, Union Oil Company; William C. McDuffie, Richfield Oil Company; K. R. Kingsbury, Standard Oil Company; G. Legh Jones, Shell Oil Company; William F. Humphrey, Associated Oil Company; R. E. Collom, Continental Oil Company; J. A. Brown, General Petroleum Corporation; C. E. Olmsted, The Texas Company; W. M. Keck, Superior Oil Company; F. C. Ripley, Chanslor-Canfield Midway Oil Company; A. B. Macbeth, Southern California Gas Company; Frederick D. Anderson, Ohio Oil Company; W. B. Pyron, Western Gulf Oil Company; C. S. Jones, Rio Grande Oil Company; Earl Gilmore, Gilmore Oil Company; A. C. Mattei, Honolulu Consolidated Oil Company; S. B. Mosher, Signal Oil & Gas Company; D. S. Faulkner, National Supply Company; J. A. Crawford, Republic Supply Company; William Reinhardt, Kettleman North Dome Association; Ralph B. Lloyd, directors.

News From California Fields

BRAD MILLS, ***Staff Representative, Los Angeles, California***

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San Miguelito Discovery Well Now Making 600 Barrels Daily

Ventura, Calif.—Continental Oil Company's Grubb 1, one of the discovery wells in the new San Miguelito field, about midway between the Ventura Avenue and Rincon fields, is producing about 600 barrels of 29.6 gravity oil from 6750 feet and has established itself as a bona fide completion. After starting off at a higher rate, sanding up and otherwise showing questionable indications, the well has straightened out and should make a fair producer as it stands. With a tubing pressure of 125 pounds and casing pressure of around 1300 pounds, a fairly steady flow is being maintained. A string of 9⅝ inch casing was cemented at 6472 feet, with 278 feet of perforated liner on bottom. The gas flow is running below 1,000,000 cubic feet.

The value of the discovery will not be determined until more drilling is done, but a new field in a district so close to Ventura Avenue could easily develop into a large producer.

The Rincon field to the west has never proved profitable, but the opposite extreme has held for Ventura Avenue. The San Miguelito field embraces an extremely rugged area just east of the coast line and credit for the discovery goes to Continental Oil Company and Chanslor-Canfield Midway Oil Company. The principal blocks are held by these two companies and Honolulu Consolidated Oil Company. There are no small tracts in the field and only a limited amount of drilling is expected.

Two Deep Tests at Kettleman Hold Center of Attention

Coalinga, Calif.—Two extremely deep tests at Kettleman Hills, one on the North Dome and another on the Middle Dome, are holding the chief interest in California's greatest oil field, and the outcome will go a long way toward determining the extent of the former and the value of the latter.

Petroleum Securities Company is drilling around 9275 feet in Burbank 1, a Middle Dome test which has been a disappointment in the Temblor formation. Around 9200 feet streaks of sand which showed good cuts and a gasoline odor were cored, but it is too early to place a definite value on these layers. Immediately below 9250 feet no cores were taken, but the formation ran unevenly to a hard gray sand. This well is one of the most important drilled on either dome and it has been a surprise to geologists who contend that the Middle Dome should be as rich per acre as the North Dome. A few hundred feet below the 8⅝-inch shut-off at 7325 feet fair cuts were obtained, but the level which was supposed to yield the heavy oil showings failed to show much of a change in formation. Continued drilling did not improve the outlook until the light oil showings were found around 9200 feet. This change, even at such a depth, was important and it may be possible to test the extreme lower portion of the hole, rather than the top of the Temblor zone. The plan around 9000 feet was to drill slightly deeper and test the upper portion of the Temblor in case a more promising formation was not found. The well has been a very valuable test from a geological standpoint.

North American Oil Consolidated's Blauvelt 1, edge test on the North Dome and about five-eighths of a mile from production, has reached a depth of 9175 feet and is still in a position to become the deepest producer in the world. Streaks of oil sand were cored below 9100 feet, but the formation changed to a more questionable nature below 9125 feet. Blauvelt 1 is on the extreme east flank of the North Dome and indirectly offsets Shell Oil Company's Dixon 1, a 6000-barrel producer at 8807 feet. The 8⅝ inch shut-off was made at 8485 feet, and the heavy oil sand was not expected above 9100 feet. Location on the structure might throw the best part of the Temblor somewhat deeper than where the formations do not plunge. A successful completion would add to the value of several edge leases, but it is believed that the producing limit can not be much farther out.

Standard Oil Company finally succeeded in completing No. 65-29J, an offset to Superior Oil Company's Huffman producers, at 7885 feet after a long series of mishaps. The initial flow showed above 5000 barrels of oil and more than 6000 barrels of water, but the present production is about 4400 barrels of 36.5 gravity oil and 200 barrels of free water. The well came in after an extended swabbing test and gives the company a clean record for all tests started on the North Dome.

Barnsdall Plans to Drill Test North of Wheeler Ridge

Bakersfield, Calif.—Barnsdall Oil Company will drill a well on Section 15-11-20, a short distance north of the Wheeler Ridge field and along the west edge of the San Joaquin valley. The general district has not been tested extensively, although efforts have been made to extend the line of production to the east. The location bears a direct relation to the folding along the edge of the valley and production is possible at a nominal depth.

The Wheeler Ridge field is a small structure and located in a very rugged district. It is controlled by Standard Oil Company of California. Production here marks the eastern limit of production along this side of the valley, Maricopa Flat being about 18 miles west and slightly north. The location selected by Barnsdall Oil Company is about the same distance east of Maricopa Flat, but the test will bear a closer connection to Wheeler Ridge than the most distant field. One well, a few miles east of Wheeler Ridge, was drilled to a depth of more than 5000 feet, but commercial production was not developed.

Slight Increase in Activity In Settled Field Anticipated

Los Angeles.—Reports that activity will increase in the settled fields of the Los Angeles basin around the first of the year are still being heard, but conditions alone will determine the amount of field work done next year. A slight increase in cleaning out, deepening and plugging back operations has been registered, but few new wells have been

started. Santa Fe Springs might be in line for more activity, should a much better demand for crude be felt. Oil from this field is in keen demand and some of the shallower zones are still good producers. Talk of an extensive drilling campaign has been heard, but competitive development at this time is out of the question. Long Beach is the most active field in the Los Angeles basin and should remain so for some time. Very little work is expected at Playa del Rey. The Dominguez field has five drilling wells and a modest development program will be carried out by Shell Oil Company and Union Oil Company.

Wildcat Test Near Goleta Abandoned at 6188 Feet

Santa Barbara, Calif.—Ohio Oil Company is abandoning Oakley 1, a wildcat near Goleta, at 6186 feet. The Vaqueros zone was found at 6135 feet, but opening of 50 feet of this formation failed to give results. A formation tester was used to good advantage and the results were convincing enough to lead to abandonment. This well was drilled on the theory that an extension of the gas field opened by General Petroleum Corporation along the coast would be found, or that a similar flow would be developed along the same general trend. Showings were found at various levels, but nothing of a commercial nature was found.

General Petroleum Corporation has abandoned all operations on the More ranch and on tideland permits except More 3, which is being redrilled below 5400 feet. A good gas production has been developed on this lease, but only a few barrels of oil have been trapped with the best volume of gas.

Los Angeles.—Ajax Petroleum Company has encountered good oil showings below 6000 feet in B. G. 1, a deep test in the old shallow Newport district, following gas showings around 6000 feet. Cores at 6125 showed a brown shale with streaks of sand which yielded good cuts. The Newport district has long been regarded favorably by several oil companies, but tests have been disappointing. Standard Oil Company drilled one deep test on the Irvine ranch, but failed to develop commercial production. Superior Oil Company is drilling at 4300 feet in hard gray sand in Irvine 1, Section 27-6-10, and does not expect important showings above 5000 feet. The Newport district is on the extreme end of the major fault line running from Beverly Hills and has produced a small amount of shallow oil for a generation.

North Belridge Deep Test Reaches 7000-Foot Level

Bakersfield, Calif.—Belridge Oil Company has reached a depth of nearly 7000 feet in No. 64-27, a deep test in the North Belridge field, but little is known of the formations encountered. The company has maintained strict secrecy and even the depths have been estimated. The company's No. 49-35 failed on a second production test and has been killed for further plugging back. A plug was set at 5474 feet, after drilling to 5595 feet, but the well was wet on the final test.

General Petroleum Corporation's Berry 1, only deep test drilling in the main Belridge field, is being cored ahead at 7320 feet in a hard brown shale. This well is regarded as a representative test of the Temblor formation and the outcome will largely determine the amount of drilling in this field. The Temblor zone seems to hold less promise toward the south than to the north and west, tests south of the main Belridge field having shown little promise.

Superior Plans Final Test Of Huntington Beach Well

Huntington Beach, Calif.—Superior Oil Company will make a final effort to develop deep production in Fee 1 before abandonment or plugging back to the known producing levels. A plug has been set at 7280 feet and the lower part of the hole abandoned. The casing will be perforated and the formation which showed best in the McCaslin well tested. Fee 1 was originally drilled to 7491 feet and shut down for several months without a production test. An unsuccessful test above the plug at 7280 feet may lead to outright abandonment of the first well to reach such a level in this field. The company is abandoning Gillette 7-2 at 8265 feet and will probably abandon Eberle 1 at 9054 feet. The latter was plugged back and redrilled to 1276 feet and may be abandoned outright. Tests of the upper producing levels have been considered.

W. E. McCaslin is still testing upper showings in Transport 17, a deep test which was drilled to 8365 feet, but the outcome is extremely doubtful. This well failed on a series of production tests between 7700 feet and bottom. No information has been given out, but is believed that the showings logged around 6000 feet are being tested on the plugging back process.

Potrero Field Still Scene Of Development Activities

Los Angeles.—Proximity of the Potrero field to market and the high gravity of the oil are the principal reasons for a continuation of efforts to develop a steady production in a district which has a very unimpressive history. The most recent completion to revive activities has declined sharply from its initial flow, but the effect of the discovery has not completely worn off. Several wells are being cleaned out and a few will be deepened. York and Smullin deepened Blinn 1 to 6700 feet, but the well responded with a flow of only 250 barrels. Pressure built up rapidly and the well acted as if it would flow satisfactorily, but the cut was nearly 50 per cent.

This indicated a faulty shoe on the water string and parted tubing. Streaks of oil sand cored around 6650 feet were among the best taken below 5000 feet, but the thickness was not impressive. The townlot district has flared up several times with discoveries below the best previous producing levels, but each time activity has declined rapidly. The oil is very light and contains a high percentage of gasoline. The structure seems badly faulted and the best completions probably were finished where the formation was dipping to stand almost on end.

Inglewood Deep Test Gets Good Showings at 5550 Feet

Los Angeles.—E. K. Allison Syndicate's Maynier 1, a deep test near the Inglewood field, has developed good showings at 5550 feet and if streaks of oil sand continue, at least a small producer may be obtained. A faulted condition was predicted by some geologists, but little evidence of a major fracture has been observed. The Inglewood field proper is known to have deep producing sands, but little development has taken place below the principal producing formations. Several edge tests have been drilled, but efforts to extend the deep zones beyond the limits of the shallow producing sands have not been successful.

Oklahoma--Kansas Field Notes

FLOYD SWINDELL, ***Staff Representative, Tulsa, Oklahoma***

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Ritz-Decker-Garrett Area to Be Restricted to 17,500 Barrels

Wichita, Kansas.—Production from the Ritz-Decker-Garrett area for December will be restricted to pipe line runs not to exceed 17,500 barrels daily, according to an announcement of L. R. Pickrell, umpire and agent for the Kansas Public Service Commission. The commission ordered that no new potentials will be taken on Viola limestone wells.

Following a hearing on October 28, an order was issued setting allowable for the pool at 17,500 barrels daily for November. Of this amount 5500 barrels were allocated to wells producing from the chat horizon and the remainder of 12,000 barrels daily to the Viola limestone. At that time it was decided that new potentials would be taken on Viola lime wells commencing December 1 but due to the fact that little change has taken place in regard to potentials of wells in that horizon, the plan to take new potentials was abandoned.

Several recommendations regarding chat well potentials have been submitted to the commission by the advisory committee and a new order probably will be forthcoming within a few days. A large percentage of wells in that horizon are making water and most operators feel that allowable production should be increased in order to protect the wells from water coning.

Barton County, Kansas, Test May Hit Production Lower

Wichita, Kansas.—Skelton Oil Company's Ott 1, CSE SE Section 16-19s-14w, southwestern Barton County, wildcat, was deepened by stages during the past week to 3278 feet, where it was making about 1½ bailers of fluid per hour. This is mostly water and there has been but little increase in the amount of fluid coming into the hole. A good showing of oil was encountered at 3228 to 3233 feet and the test looked for a while as though it had the makings of a producer. No definite announcement has been made concerning correlation on the formation from which the showing was obtained. This is about 100 feet higher than production encountered in the Arbuckle or siliceous lime in the southeastern portion of Barton County, and the show may be coming from conglomerate which is composed of reworked Arbuckle lime and has been found as much as 100 feet above the true Arbuckle. If the latter assumption is true the Ott 1, still has a chance for commercial production in the lower formations.

Charles Hilligos et al's Isern 1, SW SE NE Section 12-20s-11w, new Barton County discovery well which was reported making water earlier in the week, is now reported making clean oil. According to the latest reports the well has shown no signs of water on its pumping test. It is pumping at the rate of about 20 barrels per hour.

Ritz-Decker-Garrett

Darby Petroleum Company and Shell Petroleum Corporation made what is perhaps the most important find in the Ritz-Decker-Garrett area in several months when their David Kaegi 4-A, SE NE NE Section 20-19s-1w, found top of the Wilcox horizon at 3370 feet and was cleaning out with a hole full of oil at 3371 feet. This is the first test in the Canton sector to find production below the chat horizon and is the first to find oil in what appears to be in commercial quantity. The Canton sector has 11 gas wells producing from the chat and it has been generally believed that oil would be found farther down the structure as was the case on the Decker structure. Darby's David Kaegi 3-A, south offset to the 4-A, was completed a few weeks ago as a 24,750,000 foot gasser from chat at 2904 to 2968 feet.

Abilene Oil Company's Anderson 3, SW SW NW Section 30-19s-1w, in the Garrett pool, had Viola limestone from 3398 to 3415 feet and produced 1530 barrels the first 24 hours. It is four locations west of Mid-Kansas Oil and Gas Company's Garrett 1, discovery well in the Viola limestone. This well made 3328 barrels of oil initially from that formation at 3407 to 3415 feet.

Lario Oil & Gas Company made location for its Nina Low 1, NE NE NE Section 24-19s-2w, on the southeast edge of the Decker. This test probably will go to Viola limestone since it is located more than a half mile southeast of gas production. Lario Oil & Gas Company's Mary Boal 1, SE SE NW Section 24-19s-2w, three locations south and four west of the Nina Low 1, renewed interest in this sector when it was deepened to Viola lime at 3390 to 3396 feet, where it made 1493 barrels the first 24 hours after being shot. It had been completed originally as a small gas well in the chat at 2912 to 2948 feet.

Southeast of McPherson

Shell Petroleum Corporation announced location for a wildcat test in the CSE SW SW Section 35-19s-3w, approximately two miles southeast of the town of McPherson and about six miles north of the Voshell pool. This will be an interesting test because of its location almost directly on a line between Voshell and the old McPherson gas pool in the southwestern portion of Section 18s-2w. It is the first Kansas location to be announced by Shell Petroleum Corporation in many months. The company is one of the largest leaseholders in the state but its activities during most of the past year have been confined to "farming out" acreage to other operators. This has been done on the basis of over-riding royalty or a sliding scale percentage of production.

Seminole District Potential Well Above 300,000 Barrels

Seminole, Okla.—Figures released from the office of Ray M. Collins, state proration umpire, show that potential for pools in the Seminole district will be well above 300,000 barrels daily despite the fact that the Wanette and Konawa pools fell considerably below the estimates upon which allowable production had been based over the past few months. In general the umpire's estimates were found to be conservative in comparison with actual performance of a majority of pools on the full production tests which were completed November 27. Neither Wannette nor Konawa had previously been gauged on the 10-day plan and it was

known that they would not come up to their estimated potential as shown by application of the decline curve. Results of the November 1 to November 27 gauging were as follows:

Name of pool—	November potential based on three per cent decline	Actual potential based on 10-day gauges November 1-27
Allen	18,320	18,894
Bowlegs	25,028	26,990
Carr City	43,395	38,315
Earlsboro (old)	25,307	25,258
Earlsboro (East)	24,297	21,536*
Earlsboro (South)	13,912	11,499
Earlsboro (Townsite)	4,508	3,000
Earlsboro (East extension)	3,720	522
Konawa	22,636	13,392
Little River	41,520	41,000
Little River (East)	9,307	4,322
Maud	3,583	3,515
Mission	14,785	16,217
Sasakwa	3,283	2,722
Searight	6,789	6,766
Seminole City	23,060	24,467
Seminole (East)	2,424	2,511
St. Louis	32,590	35,518
Wanette	29,396	8,350
Total	347,860	304,794

Taking Wanette and Konawa out of both columns it will be seen that actual potential is 12,778 barrels less than that estimated on the three per cent decline curve, not a serious difference in view of the fact that several of the pools received their first dependable test during the period November 1-27. Figures shown "November Potential Based on Three Per Cent Decline," were estimated several weeks before actual gauging took place and were intended for use only until November 27, when more dependable figures would be available through the gauging of a majority of pools on the 10-day full production plan. Estimates completed a few days prior to November 1, placed total potential at slightly over 300,000 barrels daily. Allowable production will be restricted to 25 per cent of potential until over-production accumulated during the gauging period has been made up and it is then expected to be set at 50 per cent. This will give the Seminole district a daily allowable of about 150,000 barrels.

Washita County, Oklahoma, Wildcat Test Is Shut Down

Tulsa.—Cooper and Terhune are shut down at 2757 feet waiting on 5 3/16 inch casing at their Blocker 1, NW NW NW Section 29-8n-19w, wildcat test located about three miles southwest of the town of Sentinel in southwestern Washita County, Oklahoma. Operators believe that they have gone through the granite wash and expect to test a series of limestones and sands after setting casing at about the present total depth.

This test is of interest because of its location directly north of the Wichita Mountains in an area about which little is known geologically. Sunray Oil Company's Aubyme 1, SE SE SE Section 33-8n-18w, eight miles east and two miles south of the Blocker 1, encountered granite at 2040 feet and was a dry hole at 2185 feet. Burns and Prince's Dock 1, swc Section 21-8n-18w, slightly over two miles northwest of the Aubyme 1, is shut down at 1106 feet.

Mid-Continent's Largest Gas Well Completed at Oklahoma City

Oklahoma City.—Three wells were completed during the past week in the Oklahoma City pool. Outstanding among these was the Anderson and Kerr and Plains Petroleum Company's Little 1, NW SE NE Section 10-11n-3w, the largest gas well in the pool and perhaps the largest that has ever been completed in the Mid-Continent. Six inch casing was set at 6317 feet on top of the Wilcox sand and drilling discontinued at 6389 feet. As near as can be determined from the short flow it is making close to 230,000,000 cubic feet of gas and a relatively small amount of oil. It was closed in after it had produced 367 barrels of oil in 37 minutes. At that time the separators threatened to give away and it was considered exceptionally hazardous to proceed with the potential gauge.

Setting of casing on top of the sand in this area is contrary to the general practice due to the fact that several nearby wells have encountered gas volumes in excess of the amount that could be handled in safety with the usual equipment. Most operators have set the last string several feet below the top of the sand and cement off a portion of the gas.

Ocate Oil Company's Smith 1, CE½ NE NE NW Section 15-11n-3w, gauged 1307 barrels the first 35 minutes, flowing through a four-inch choke under 100 pounds back pressure. Production is coming from 109 feet of Wilcox sand topped at 6401 feet. At this rate of flow the well would be rated at 53,712 barrels for the 24-hour potential, making it one of the largest completions in that part of the pool. Wilcox Oil and Gas Company and Marshall's Buxton 1, CS½ SW NE NW Section 3-11n-3w, was drilled to 6482 feet, cleaned into the pits and shut in with no gauge.

Test in Sacred Heart Area of St. Louis Pool Down 3670 Feet

Seminole, Okla.—Mid-Continent Petroleum Corporation's Farmer 1, SE SW NW Section 2-6n-4e, in the Sacred Heart area southwest of the St. Louis pool, encountered top of the Mayes lime at 3640 feet and was drilling in that formation at 3670 feet when last reported. By comparison with nearby tests, top of the Viola limestone is expected at about minus 3025 feet. In the St. Louis pool the interval between top of the Viola and top of the Wilcox sand is 230 to 280 feet. In general the oil-water contact for the Seminole district has been found at about the minus 3300 foot contour. Assuming that Viola lime is encountered as high as the minus 3025 the test is accorded good chances for producing from the upper Simpson.

Seminole District Test Makes 1040 Barrels in Twelve Hours

Seminole, Okla.—Stanolind Oil and Gas Company's Jones 2, SW SE NW Section 20-9n-6e, was the real news of the week so far as the Seminole district was concerned. On a 12-hour test during the past week it produced 1040 barrels and was said to be cutting 12 to 14 per cent water. This is an old Wilcox sand producer plugged back to 2800 feet and the eight-inch casing ripped from 2770 to 2775 feet.

This new production was reported last week as probably coming from the Gilcrease or Cromwell sands. Further investigation shows that the new horizon is above the stratigraphic position of either of these sands and is probably in the Wewoka series. Source of the water is unknown but with the condition of the hole it may be coming from a sand or sands a considerable distance up the hole.

Oklahoma City Celebrates Third Birthday Anniversary

OKLAHOMA CITY.—The Oklahoma City pool celebrates its third birthday on Friday, December 4, bringing to a close three eventful years for that pool and for the oil industry in general. Indian Territory Illuminating Oil Company's Oklahoma City 1, CSE SE Section 24-11n-3w, discovery well of the pool, was a rank wildcat located on structure which could be traced only in a general way. At that time the geological profession placed little confidence in Permian structure due to the fact that several unconformities were known to exist between formations of that age and those of the Pennsylvanian, wherein production could be expected. Permian rocks might be highly folded at the surface with little or no folding in the Pennsylvanian and lower beds. Laboring under these handicaps this test was accorded but little chance for locating production in commercial quantities. Now that the subsurface structural condition is well known it cannot be disputed that the finding of production in pre-Pennsylvanian beds was largely a matter of luck.

During the period that has elapsed since discovery of this great pool the price of crude oil fell from $1.46 per barrel for 38 to 38.9 gravity oil to a low of 20 cents per barrel for the same gravity in the postings of July 8, 1931. The present price is 81 cents. Eight hundred and forty-six wells were completed at an average cost of approximately $150,000 per well, making this pool the outstanding development of the three-year period as regards the amount of money expended. Development costs up to the present time are estimated to closely approach $200,000,000, including cost of leaseholds and lease equipment. Of the total of 846 wells, approximately 125 were originally completed in the Arbuckle limestone, 415 in the Lower Simpson or intermediate zone, and the remaining 306 in the Wilcox sand.

The discovery well made some water initially and the Arbuckle zone as a whole was only a few months old when many wells started producing water in varying quantities. During the week ending July 19, 1930, with an average of 41 wells on production daily, the average daily production was 73,690 barrels of oil and 14,721 barrels of water, or a total for the week of 515,824 barrels of oil and 102,950 barrels of water. At the present time about 40 per cent of the Arbuckle limestone wells have been plugged back to upper horizons and those still producing from that formation are all making water.

Under the proration scheme now in force, production from the Arbuckle horizon should be exhausted early in 1932. A survey made several weeks ago showed that 118 sand wells were making water. More than 90 per cent of these are producing from the Lower Simpson and as yet water has not become a problem in the Wilcox sand. Only one well in the north Wilcox area has been reported making water and this was eliminated through careful beaning or choking at the surface. This well, Phillips Petroleum Company's Burt 1, was reported to make about two per cent water while using a three-fourths inch choke. By reducing to a one-half inch choke the water was eliminated.

That rigid proration regulations have been enforced throughout life of the pool is indicated by the fact that the 846 completed wells have produced to December 4, 1931, a total of only about 85,240,000 barrels. Production from the date of discovery to December 4, 1931, was as follows:

	1928	1929	1930	1931
January		177,599	2,542,124	2,563,483
February		159,239	2,272,340	2,558,556
March		102,889	2,205,433	4,067,758
April		111,330	3,223,830	4,964,040
May		88,009	3,574,269	4,920,692
June		150,780	3,337,770	4,895,130
July		685,007	2,548,324	4,947,321
August		1,147,558	3,193,682	[1]824,755
September		1,738,590	3,064,080	551,220
October		2,136,923	2,856,340	[2]4,438,518
November		1,679,370	2,432,940	[3]5,400,000
December	150,000	2,259,156	2,729,302	[4]540,000
Yearly totals	150,000	10,436,450	33,980,434	40,671,473

[1]Martial law shut down went into effect 7:00 a. m. August 5.
[2]Pool opened at 7:00 a. m., October 10, after a shut down of 66 days.
[3]Estimated on the basis of 180,000 barrels per day.
[4]For the first three days in December. Estimated at 180,000 barrels per day.

Total recovery estimated from December 4, 1928 to December 4, 1929, 85,238,357 barrels.

The present outlook, so far as future development is concerned, is that all Arbuckle limestone wells will have been plugged back and converted into gas wells in the Layton Series by June, 1932; and that most of the activity in the Lower Simpson or intermediate zone will be plugging back to shut off water.

Just what will happen in the Wilcox sand areas cannot be foretold at this time. Recent completions in the Wilcox sand in Sections 22 and 23-11n-3w insure an active exploration campaign in that area which lies about midway between what is known as the north and south Wilcox zones.

Phillips Petroleum Company and Shell Petroleum Corporation's Egermeir 1, SW SW SW Section 23-11n-3w, the first well completed in that sector, was good for more than 20,000 barrels estimated initial production and Kessler Oil & Gas Company's Canning 1, west offset to the Egermeir 1, is being estimated as high as 40,000 barrels. This well was bailed in about two weeks ago and shut in without gauging. Three other adjacent wells are due for completion at early dates. No further exploratory work will be done in the south Wilcox area and the key to the situation in the north Wilcox is in the hands of the Oklahoma City planning commission, which now has under advisement a petition to extend the drilling zone northward.

Westgate Oil Company's Carey 9, SE NW SE Section 34-12n-3w, one of the northernmost producers, was given a 24-hour potential rating of 96,540 barrels based on a recent gauge of four hours. This well was completed in August, 1931, flowing 8463 barrels in 2 1/3 hours from 209 feet of Wilcox sand topped at 6322 feet. Thickness of the Wilcox sand in this area and the large production obtained from some of the wells indicate that considerable development can be expected, provided the commission sees fit to extend the drilling zone. This is well into the city limits and further extension to the north would carry development into the industrial and residential districts which now have large wells within a stone's throw.

North and West Texas Field Notes

H. H. KING, *Staff Representative, Fort Worth, Texas*

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Big Lake Wells Producing Two Separate Grades of Crude

San Angelo, Texas. — The unusual feat of producing a large volume of oil daily by natural flow from wells that yield two entirely separate grades and color of oil from the same general lime horizon promises to become a routine matter with the two companies holding the deep wells in the Big Lake field section of West Texas. Big Lake Oil Company's University 5-C is producing approximately 4750 barrels of a dual grade of oil and 25,800,000 cubic feet of gas daily from the regular 8600-8872-foot horizon, and the amount of each grade desired is regulated by opening of chokes on flow lines serving the casing and tubing. The oil produced through tubing from the bottom of the hole is 46.6 gravity straw colored containing a high percentage of lubricating oil that commands a 20 cents per barrel premium, while the oil produced through the casing from the upper section of the deep lime horizon is almost water white in color and is about 60 gravity, but lacking in lube value.

Regulation of back pressure on the tubing and casing in Big Lake Oil Company's University 5-C enables the field crew to equalize withdrawals from the different oil sources before contamination takes place within the casing underground. The well was yielding 5400 barrels of 51 gravity oil and 28,750,000 cubic feet of gas early in November when four-inch tubing was swinging at 6040 feet. More tubing was added to equip the well with 8841 feet of tubing, which is now swinging 31 feet off bottom, and by doing so the gas-oil ratio was lowered. This procedure also enables the company to start extracting the two widely different grades of crude from the same general horizon. About 400 pounds back pressure is being carried on the seven-inch casing, and 650 pounds on the tubing, while the gas separator registers 300 pounds back pressure.

This unusual condition is made possible by the presence of heavy flow of wet gas production in the top section of the deep lime horizon, and the oil obtained with the gas is virtually gasoline. Very little gas prevails in the lower section of the lime, and for this reason plans are under way for future wells to set casing and cement below the prolific gas level.

Big Lake Oil Company is selling from 3000 to 5000 barrels of the deep production from the lower lime section to The Texas Company on contract, which provides for the delivery of oil testing less than 48 gravity, while the former utilizes the higher gravity deep production in stepping up the gravity of its 169 wells in the regular 3000-foot horizon in order to command top price posting for them, also. Big Lake Oil Company's University 1-C, which succeeded in shutting off the upper oil and gas production after drilled to 8908 feet, is flowing 940 barrels of 43.9 gravity premium grade crude and 1,163,000 cubic feet of gas daily, carrying 1770 pounds back pressure on casing and 1035 pounds on tubing. This well is the lowest structurally of all deep holes that have been drilled.

Group One Oil Corporation, which is controlled by Continental Oil Company, has found it possible to produce separate grades of crude from its deep wells by adjusting the back pressure and withdrawing from casing and tubing. This company's University 3-B was preparing to test early this week at 8836 feet after having drilled past the heavy gas flow and high gravity oil horizon. It has been deepened on several occasions and produced to determine if the lower gravity and valuable lube oil content crude source was tapped during the past few weeks. University 1-B, discovery well of the deep horizon, is drilled with rotary at 6770 feet after having abandoned old hole at the 5100-foot level in order to re-case the hole and tap the lower oil horizon. It is planned to set casing below the heavy gas. University 4-B is producing 9100 barrels of 53 gravity oil at 8587 feet along with 57,800,000 cubic feet of gas daily.

Producer Reinstates Doubtful Spot in Longview Area

Longview, Texas. — Evidence that the semi-arid area within the production zone on the Castleberry land, Longview section of the East Texas field, will not cover much territory was borne out late last week when Atlantic Oil Producing Company's Clemens 1 flowed 185 barrels per hour through 1¼-inch choke from 22 feet of sand topped at 3611 feet. The hole was carried 16 feet into shale to a total depth of 3649 feet. This well is north of Arkansas Fuel Oil Company's Castleberry lease, which scored a small pumper at the best on the second well drilled.

Oil drainage in the Camps Switch area is believed to be responsible for the failure of Powell-Iron and Branson's W. A. Horton 1 to flow after swabbing for several days from broken sand at 3510 to 3560 feet. This inside well is surrounded by producers that scored high initial yields, and it is possible that the flush production has been exhausted. Horton 1 is located on a small tract, and a short distance northwest of Camps Switch.

Tyler.—The crude market situation in the East Texas field remains fairly firm in the face of recent advance of production to the 400,000 barrel level. More strength would be thrown into the market should the total daily output be lowered, as some of the majors are reluctant to absorb oil above current requirements because of approaching inventories.

The Texas Company has almost completely quit the field as a buyer of outside oil, having elected to concentrate on common carrier shipments in filling the lines of Texas Pipe Line Company. Humble Oil & Refining Company is lightening its crude buying load, and is reported to have made a deal to divert a number of connections in the north end of the field to Gulf Pipe Line Company beginning December 1, to continue for four months.

Houston.—Finish was written to another of the several costly prospect wells at Mykawa field, Harris County, this week when Humble Oil & Refining Company abandoned its Erwin 2 at 6400 feet. The well was drilled to 6460 feet, the bottom of the hole cemented to prevent a blowout. Erwin 2 was located on the east side of what is considered the Mykawa field.

East Central Texas Field Notes

H. H. KING, ***Staff Representative, Fort Worth, Texas***

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Reservoir Pressure Decline at Van Presages Widespread Pumping

Tyler, Texas.—Decline of the reservoir pressure at scattered points in the Van field forecasts a greater need of pumping equipment in the near future, and likewise will cause a revision of early estimates made by engineers as to the potential oil recovery from the Woodbine sand horizon. Loss in rock pressure has not been uniformly distributed over the field, but has appeared at sufficient points to indicate that the sand is reflecting the oil and gas withdrawals now being made. The field has approximately 4160 acres of oil producing leases and about 270 wells that have yielded approximately 21,840,000 barrels since the completion of the discovery well by Pure Oil Company on October 14, 1929. Production has been restricted to 50,000 barrels daily since August 20, and at no time has it exceeded the above level any appreciable extent.

Evidence of the slump in rock pressure taking place was revealed by Pure Oil Company's N. E. Clark 6, located on 89-acre lease in the lower end of the Mund Gross Survey and a short distance southwest of Van townsite, as this new completion only recorded 350 pounds rock pressure on casing and 312 pounds rock pressure on tubing. It showed an initial flow of 82 barrels oil per hour through 11/-16-inch choke on 2½-inch tubing. The gas yield was estimated at 712,000 cubic feet daily, based on hourly gauge through choke. This well cemented seven-inch pipe on top of Woodbine sand at 2668 feet, and drilled to 2942 feet. Pure Oil Company's V. T. Davis 1-T, which is drilling to the Trinity sand, was in broken lime below 4541 feet early this week.

Proposed New Ruling Would Increase Well Completion Cost

Longview, Texas.—Cost of completing wells in the East Texas field will be increased from $1000 to $2000 on an average in the event military authorities adopt an order now under consideration that will require the cementing of surface casing near the 900-foot level as a means of protecting shallow fresh water sands that underlie most of the field. Operators are now allowed to set and cement whatever length of surface pipe desired, and same varies from about 60 to 250 feet, except in the townsite areas, where special rules apply on casing. Widespread use of second-hand casing by both major and independent operators has resulted in defective pipe going into service and permitting oil to pollute the shallow water sands.

In addition to stimulating the demand for large pipe in the field, the proposed order would necessitate an increase in drilling prices to contractors of 25 cents or more per foot to cover the cost of cutting a large hole to the 900-foot level. The proposed order would also require operators to test the cement job on the surface pipe in the same manner that the oil string is tested for leaks before cement plug can be drilled.

Some opposition to the proposed surface casing order has arisen because the field is probably 50 per cent drilled up; and no provisions are made for remedying the shallow water sand pollution situation already taking place. The recent order that requires the oil string to be tested before drilling out cement is believed to have greatly reduced the amount of pollution. Many field superintendents have contended all along that there is danger in using a short surface string, and then depend on the oil string, varying from seven to 4¾ inches, to carry the load. Some of this group have succeeded in inducing their companies to cement from 225 to 250 feet of surface pipe to reduce the hazard of collapsed pipe.

Operations Along North Edge Of East Texas Disappointing

Longview, Texas.—Operations scattered along the north end of the East Texas field are providing most of the exceptions to the general run of good completions that are offered each week. Operators are encountering trouble in trying to broaden the oil area in this direction, as irregular sand conditions make it possible to score water wells even though located on a line between producers. Humble Oil & Refining Company's L. T. Mackey 1, located in southwest corner of 95-acre lease, S. Harrell Survey, Upshur County, has been ordered plugged in Woodbine at 3636-3674 feet after swabbing salt water with only a small volume of oil in evidence. It was drilled to a sub sea depth of 3333 feet. California Petroleum Corporation's of Venezuela D. Culpepper 1, located near production in the Wm. King Survey, swabbed dry at 3753 and again at 3757 feet. The hole was deepened to 3761 feet, or near the expected water level late last week to make a third try for production.

Alma Petroleum Corporation's J. W. L. Younse 1, located in the southeast part of the Wm. Goodman Survey and due north of Gladewater, went dead after being on production since middle August. The hole was deepened from 3649 to 3668 feet, or a sub sea depth of 3319 feet, and failed to flow when given a swabbing test. Ty-Tex Oil & Development Company and W. B. Letts' S. F. Kay 1, which was reported to have been ordered plugged after testing for a small well in sand at 3648-3669 feet, is standardizing to work over since the well developed a small oil flow while standing. It was carried 3353 feet below sea level. It is the furtherest west well in the Upshur County section of the Longview area, being located in the northeast corner of 50-acre lease, H. W. Augustine Survey.

East Texas Refining Company's W. L. Fuller 1, located on 50-acre lease in D. Sanches Survey, and on east edge of the north portion of the Longview area, was installing packer on tubing late last week to try and develop a flowing well after testing 2000 feet oil in hole from broken sand at 3674-3715 feet. Arkansas Fuel Oil Company's Castleberry 2 has shut down after standardizing and testing 200 feet oil in hole and a like amount of fresh water at 3694 feet.

Simplex Oil Company's J. E. Lawther 1, located on 35-acre lease in the John Moffett Survey, Gregg County, and in the northeast part of the Kilgore area, failed to flow after three days of swabbing from broken sand at 3553-67

feet, and has been shut down to pump with a hole full oil. This outpost well was drilled to the top of the Georgetown lime at 3589 feet, having a sub sea total depth of 3237 feet.

Failure of Prairie Oil & Gas Company's H. J. Thomas 1, located in northeast corner of the Jas. M. Morris Survey and on the west edge of the Kilgore area, to develop water after being on production for more than 10 days has resulted in Magnolia Petroleum Company's Alonzo Hicks 2 being started as a northeast offset. Thomas 1 drilled five feet of sand to a total depth of 3751 feet, and because of having a sub sea depth of 3347 feet was expected to make salt water.

Right-of-way land of the I. & G. N. Railroad between Kilgore and South Kilgore is receiving another test, and drilling rights on this particular location are held by the Mercury Oil Company, which is rigging up opposite Shell Petroleum Corporation's Willoughby lease.

Showdown of Jamestown Area Possibilities Is Delayed

Longview, Texas.—A showdown as to the oil possibilities in the Jamestown area, which gave promise of opening a new Woodbine sand field about four miles north of the East Texas field on November 15, will not materialize for several weeks or more. Cranfill-Reynolds Company et al's M. L. Rash 1 made this bid for a new pool opener by testing 2300 feet 34.5 gravity oil in drill stem at a total depth of 3728 feet, near the center of a 3500-acre drilling block. The acreage and well is held jointly with other interests, and a division of acreage may result before the cement plug is drilled from the casing and a production test given the sand.

A test of the Kelsey dome area in southwestern Upshur County was getting underway early this week as result of Pilot Oil Company and W. F. Snebold, Fort Worth geologist, having acquired a 2500-acre block on a 50-50 basis, and contracted to drill to 4000 feet, or into the Georgetown lime formation. Derrick has been erected 990 feet from the west and 900 feet from the south lines of the J. W. Ray 117-acre lease, Alfred H. Wood Survey, and about 1½ miles southeast of deep dry hole drilled several years ago by Amerada Petroleum Corporation.

Shelby County, Texas, Test Makes Commercial Gas Well

Marshall, Texas.—E. L. Chapman's Pickering Lumber Company 1, C. F. Henry Survey, a wildcat in Shelby County, Texas, two miles west of the Louisiana state line, and adjacent to the village of Joaquin, has not yet been officially gauged but the well has been officially completed as an estimated 10,000,000 cubic foot gasser, at total depth of 3864 feet in oolitic lime. A test showed the gasoline content per 1,000,000 cubic feet of gas to be 320 gallons.

McRobie and associates are arranging to set a string of 6⅝-inch casing at 3369 feet in Windham 1, William Leach Survey, a Shelby County wildcat near Shelbyville, after recovering a nine-foot saturated core from 3360 to 3369 feet, in the Woodbine formation. This test previously had shown a little gas in the chalk at 2282 feet, and later a slight show of oil in the Blossom from 2686 to 2692 feet.

In the same general area, United North and South Production Company's Windham 1, A. H. English Survey, is shut down waiting orders at depth of 3391 feet after testing 17 joints of mud with a trace of oil in a drill stem test from 3355 to 3391 feet. Previously this test was dry with a slight show of oil at 3204 feet. The later test was made in the Woodbine.

Operations in East Texas Increased by 11 in Week

Longview, Texas.—Operations in the East Texas field registered an increase during the past week after having declined for four consecutive weeks from a peak of 886 operations attained October 23. A gain of 11 operations during the past week advanced the total to 710, and during this period there was 105 new locations credited to the field, including 60 by major companies. This upward swing in field work probably is due to the failure of Governor R. S. Sterling to change the method of proration so as to penalize unnecessary drilling, as many companies have delayed drilling of offsets caused by neighbors in anticipation of a combination acreage and lease investment plan of proration being applied to the field.

Since Governor Sterling has elected to reduce the allowable per well from 125 to 110 barrels daily effective 7 a. m. December 2, instead of making a change in the method of arriving at proration allowances it is believed that the straight well basis of prorating will continue indefinitely. In the event operators are convinced that such a policy will be adhered to it is quite probable that a revival of drilling will follow, especially to the extent of taking care of the many hundred offset locations that remain to be drilled.

Operations East Texas Field

Most active companies operating in Gregg, Upshur, Rusk and Smith Counties, comprising the East Texas field, are listed below, with total operations held by each, exclusive of completions, as of November 27, 1931:

Company—	Locations	Derricks & Rigs	Active Tests	Total Underway
Humble Oil & Refining Company	1	34	21	56
Gulf Production Company et al	6	15	10	31
Magnolia Petroleum Company	5	10	13	28
Arkansas Fuel Oil Company	4	9	11	24
Atlantic Oil Prod. Company et al	8	3	8	19
Mid-Kansas Oil & Gas Company	4	6	8	18
Sun Oil Company	4	5	7	16
Yount-Lee Oil Company	3	6	6	15
Tidal Oil Company	9	3	2	14
The Texas Company	2	5	6	13
H. L. Hunt et al	1	4	6	11
Shell Petroleum Corporation	.	2	9	11
Stanolind-Simms Oil Company	4	2	5	11
Sinclair Oil & Gas Company	.	2	6	8
California Petroleum Corp. of Ven.	2	1	4	7
Empire Gas & Fuel Company	.	1	6	7
C. B. Bunte, Inc. et al	4	1	1	6
Golding-Murchison Oil Company	.	5	.	5
Stanolind Oil & Gas Company	2	1	2	5
Barnsdall Oil Company et al	.	4	.	4
Cranfill-Reynolds Company et al	1	2	1	4
Sabinas Oil Corporation	1	2	1	4
Selby Oil & Gas Company et al	.	2	2	4
Superior Oil Company	.	2	2	4
Amerada Petroleum Corporation	.	.	3	3
F-H-E Oil Company	1	1	1	3
Total for 26 companies	62	128	141	331
Miscellaneous companies	29	139	211	379
Total	91	267	352	710
Total previous week	100	240	359	699
Operations By Areas				
Longview	44	117	155	316
Joiner	17	75	110	202
Kilgore	30	75	87	192
Total	91	267	352	710

South Texas Field Developments

EARL POST, ***Staff Representative, San Antonio, Texas***

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Wildcatting Interest In Southwest Texas Turns to Lower Rio Grande

San Antonio, Texas.—Wildcatting interest turns toward the lower Rio Grande Valley as an extensive leasing campaign, backed by a number of deep tests, gets under way. During the past several weeks between 35,000 and 50,000 acres have been reported to have been leased in Hidalgo County alone.

Two deep structures and one shallow area have been opened in the Rio Grande Valley area and one gas field has been opened a few miles southwest of it in Mexico. While none of these producing areas have been unusually prolific, they indicate production in the area.

The most outstanding development was the leasing of 14,000 acres out of the W. L. Hart ranch by La Joya Oil and Gas Company. Derrick is up for the first test, six miles west of Mission and near Sam Fordyce. The well will be spudded within a few days. This is a new company composed of Rio Grande Valley developers and business men and has a capital stock of $50,000. The officers are A. Van Dresser, Pharr, president; John A. Shary and J. D. Brock, vice presidents; J. Franklin Ewers, secretary and treasurer.

Dayle L. Smith Oil Company has leased an additional 4000 acres of the Daskam tract and will start a well before January 1. This company has drilled 11 wells during the past 13 years on the 11,000 acres of the Fernandez and Daskam leases and the new acquisition brings the total acreage under lease by the concern to 15,000. This company had a gas blowout in its last test, Fernandez 5, located on Porcion 76, near Sam Fordyce, recently. The well had the gas sand at 4010-26 feet, but a salt water horizon at 3992 feet caused a great deal of trouble and the well was shut in preparatory to cutting off this flow. The La Joya test and the new Smith well will test out this deep gas horizon.

John T. Lomax has leased 8000 acres of the Lane ranch, northwest of Mission, to a California operator, but the announcement as to who took the lease has not been made. However, it is announced that a deep test is contracted to be started before January 1. Standard Oil Company of California, also northwest of Mission, has made a lease of 8000 acres of the Slick ranch. Adjoining this ranch, Davenport and associates have erected a derrick for their Wells 1 on the Wells ranch. This test is 30 miles northwest of Mission.

E. J. Barrett and P. Kanellos' J. D. Brock 1, 15 miles northwest of Mission on the Monte Cristo road, has reached 400 feet after running 12-inch casing to 300 feet. All the above wells are in Hidalgo County.

Starr County, which adjoins Hidalgo, is the scene of a rather active campaign, mostly to shallow levels. The Texas Company has the only deep production in this county, it being in the Roma field, where several very small producers are recorded.

In the Los Olmos pool, about eight miles north of Rio Grande City, Hooks and Weaver are drilling one well, Los Olmos Oil Company is drilling two, San Marcos Drilling Company is drilling one and Rio Oil and Refining Company is drilling one. The latter is the Kelsey Bass 1, center of the southwest one-half of the southwest one-half of Survey 6, which is to be a deep test. It originally was drilled by Los Olmos Oil Company, but is being deepened by the new company. The well is now below 1000 feet. Several shallow wildcats are also being drilled in the vicinity of the pool. The Los Olmos pool has several oil and gas horizons running from 200 to 600 feet.

No Completions Are Recorded In Zapata County During Week

San Antonio, Texas.—Although there are a number of wells being sunk to the shallow producing horizons of the Zapata County fields, no completions were recorded during the week.

Grayburg Oil Company's F. C. Martinez 1, Survey 4, Martinez extension of the Jennings field, is preparing to swab. This well has the sand at 1937-39 feet. In the Muckelroy extension of the same field, A. W. Killam's A. Bustamante 10, also is preparing to complete. It has the sand at 1456-58 feet. The well is on block 11, share 5, Comitas Grant. Trevino Oil Corporation's Trevino 13-B, in block 25, Survey 412, of the same extension pool, is preparing to complete with the top of the sand recorded at 1240 feet.

Other active wells in the Jennings district include Winch and Billing's Bustamante 3, share 35, Comitas Grant, Muckelroy extension, coring 1430 feet; S. R. & C. Oil Corporation's Trevino 5-E, block 12, Survey 65, Muckelroy extension, rigging up; South Texas Production Company's Measles et al 10, Survey 207, drilling 1850 feet, showing gas; Shankle & Murray's F. Cuellar 2, block 5, Survey 61, Martinez extension, drilling 1400 feet; Lowe and Rogers et al's Benavides 3, block 16, Survey 11, prepare to spud in; O. W. Killam's Cuellar 47-B, Survey 277, Cuellar extension, drilling 940 feet; Joe M. Gier's M. Garza Estate 1, block 18, Comitas Grant, drilling 250 feet; F. H. Etheridge's Joe Bustamante 2, share 35, Comitas Grant, Muckelry extension, skidding derrick; E. K. Bateman's M. Garza Estate 1, block 29, Comitas Grant, Muckelroy extension, drilling 1570 feet; Allied Oil and Gas Company and Morris and Allen's Gutierrez 17, share 4, Comitas Grant, coring 1400 feet.

Producer at Darst Creek To Be Placed on the Pump

San Antonio, Texas.—One new producer and three wells on top of the pay featured activity in the Darst Creek district of Guadalupe County during the week.

The new producer was Humble Oil & Refining Company's Dan Denman 2-C, about midway between the Denman 1-C and the discovery well of the Camp pool. This well got the top of the Edwards lime at 2522 feet and was drilled 11 feet into the pay, where it showed some oil. Deepened 10 feet to a total depth of 2543 feet, the well showed an increase in gas pressure and was standing about 2000 feet in oil, but would not flow. Tubing and rods will be run and the test put on the pump. It is in the William Arrington Survey of the Camp pool, 1¼ miles south of

the Darst Creek field. So far, five other wells have been drilled in this pool, three hitting crevices and making high initial flows, the fourth ran regularly and made a small producer. The newest test, which is the fifth, ran the formations regularly and will have to be placed on pump.

In the main field, The Texas Company is coring for the sand in three wells on inside locations. All of them are in the Jacob Darst Survey. They are Lemmie Anderson 7, drilling at 2556 feet in the Del Rio; R. A. Parrish 4, drilling 2560 feet in the Georgetown; Henry Willie 7, drilling 2586 feet in the Georgetown.

Nueces County Wildcat Is Shut Down After Threatened Blowout

San Antonio, Texas.—Stanolind Oil and Gas Company's Charles E. Stratton wildcat in Nueces County, attempted to blow out when it cored into a sand at 4788 feet. The drill stem was several fourbles off bottom and collapsed, which accounted for the blowout. A tester was on the drill stem, but no test was available. The well has been cored three feet deeper to a total depth of 4791 feet, where it is shut down.

This well made a gasser at 4746-58 feet. It built up good pressure when shut in, but dropped shortly after being allowed to flow. It is not known whether a new string of casing will be run to the top of the new sand or the entire formation from 4746-91 feet, the total open hole, will be tested.

This well is located in Section 12, Stratton subdivision, in the southwestern part of the county. It is 1650 feet from the east line and 330 feet from the south line in the P. Anchow Survey, six miles south of Agua Dulce.

San Antonio, Texas.—So successful was Usher Carson in deepening his Webster 5, in the Carolina-Texas field, Webb County, that Webster 4-D, now at a total depth of 2618 feet, will be sunk to the lower horizon. This test is in the southwest quarter of the northeast quarter of Survey 684. The Webster 5 made 125 barrels of 47 gravity oil from 3026-50 feet.

New Cole Field Oil Area Showing Heavy Sand Below New Horizon

San Antonio, Texas.—The new oil district of the Cole field, Duval County, is showing a heavy sand just below the new horizon. Cole Petroleum Company's Benavides 72, block 8, Survey 19, showed salt water and oil at the regular horizon, 1754 feet, and was drilled to 1760 feet, where it was cored to a depth of 1848 feet, or a total of 88 feet of sand. It is being cored slightly deeper and will be tested. The same company has made location for Benavides 73 on the same block.

Frank Garvis et al's Schallert 2, block 10, Survey No. 255, is a new operation for Duval County. It is on the Schallert salt dome, where these operators encountered a good showing in their first well. It is rigged up and will start drilling shortly.

Magnolia Petroleum Company is rigging up J. O. Wilson 7, in the Schoolfield and O'Byrne pool, also in Duval County. The well is on Survey 134.

Thomas and Tarver, Inc.'s Welder-Wood 1, 16 miles from the Schoolfield and O'Byrne pool, has been drilled in and was at last reports coring at 2185 feet. This well showed oil and salt water at 2150-55 feet and casing was set to bring it in; it may open a new field.

Test in Southern Gas Field of McMullen County, Is Promising

San Antonio, Texas.—Jacob, Buzzini and Pitckett's Jacob 1, in the Southern gas field, McMullen County, has set casing on top of a sand at 756-62 feet, which shows for a producer. This field is the first producing area in Southwest Texas to supply San Antonio with natural gas and has been dormant from the standpoint of drilling for years. The new test is in the W. H. Jacob Survey No. 8, about 300 feet northwest of Jacob 3. It is 1000 feet from the north line and 800 feet from the east line of the tract and four miles north of the town of Callahan. If the well fails to make a producer it will be deepened.

Well in Damac Pool, Northern Bee County, Making 500 Barrels

San Antonio, Texas.—Houston Oil Company's Portis 2, in the Damac pool of northern Bee County, is flowing at the rate of 500 barrels daily through a one-fourth-inch choke from 3898-3905 feet. The well is a southwest offset to the Damac discovery well and is in A. Smalley Survey. A location has been made for Portis 3, south of the well.

T. B. Slick Estate's George A. Ray 1, in the George A. Kerr Survey, north offset to the Portis east offset to the Damac, has been spudded in and set surface casing.

In the old Pettus field, several miles northeast of this producer, United Production Company's Ray 39, T. Hanson Survey, is drilling at 7377 feet.

San Antonio, Texas.—John F. Camp and Stanolind Oil and Gas Company will make another attempt to develop commercial production on their large block near Charco, in Goliad County. Location has been made for Pettus 3, which is 2438 feet north and 74 degrees east of Pettus 2. Pettus 1 made a small producer with lots of gas and some salt water at 4282-86 feet late in July of this year. The test is being rigged up.

San Antonio, Texas.—The deepest test ever drilled in Jim Wells County has been shut down at 6464 feet for orders, probably to be abandoned. This well is Stanolind Oil and Gas Company's Hoffman 1, located 6800 feet south and 10,000 feet west of the most easterly northeast corner of the N. A. Hoffman 7000-acre tract in the La Trinidad Grant. The well is 4½ miles southwest of Ben Bolt.

San Antonio, Texas.—C. R. & M. Corporation and H. H. Weinert are moving in for Mike Stropkey 1, one mile northeast of the Slick pool in Goliad County. This is the first drilling that this particular district, which has two producing wells, has seen for months. The exact location is described as follows: from the southwest corner, follow southwest line 660 feet in a northwesterly direction, thence 660 feet northeast to that line at right angles.

Meridian, Miss.—Gulf Refining Company's Long-Bell Lumber Company A-1, SW SW Section 10-2n-16e, Clarke County, Mississippi, which showed considerable heavy oil along with salt water in the upper Eutaw formation from 3692 to 3700 feet, and was expected to pick up a sand in the Tuscaloosa formation between 4450 and 4500 feet, Monday, November 30, was drilling red shale with streaks of gray sand at 4485 feet.

Gulf Coast Field Developments

JACK LOGAN, ***Staff Representative, Houston, Texas***

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430 Barrels Flush Obtained From Matagorda County Well

Houston.—Powers Production Company and Hamill et al completed in Matagorda County at Markham last week Myers 1 at 3376 feet for an initial production estimated at 430 barrels of 29.6 gravity oil. This well is located 210 feet north of E. M. Hamill et al's Myers 1, in Block 6, William Hadden Survey. The latter test, it will be recalled, was completed at Markham for 500 barrels flush oil, at a total depth of only 3265 feet.

The new producer set 6⅝-inch casing at 3355 feet and ran one joint of Stancliff screen. Pressure on the 2½-inch tubing was 400 pounds; on the casing it was 150 pounds. The earlier completion referred to above set 23 feet of 4½-inch screen and showed an initial pressure of 475 pounds on the choke. Both wells were put on a quarter-inch choke.

Two other wells in Matagorda County, both of them wildcats, have reached interesting depths. Harvey Smith's Boker 1, Citrus Grove prospect, encountered a few faint gas shows around 3900 feet and at latest reports was drilling near 4100 feet in a broken lime formation which was entered slightly below 4025 feet. The other test, United North and South Development Company's Stoddard 1, Buckeye District prospect, set casing at 5400 feet after running into a show of gas at 5475-5510 feet. Total depth of this well at last reports was around 5550 feet.

Cheek Dome Prospect Passes 6381 Feet Without Showing

Houston.—Humble Oil & Refining Company's prospect deep test on the Cheek dome, Jefferson County, has passed a depth of 6381 feet without finding any significant showings. This well, known as Ross B. Nelson 1, is located four miles southeast of the town of Cheek, 550 feet south and 70 feet west of the northeast corner of the William Rice Heirs Survey, in the R. B. Nelson 1072-acre tract.

John I. Pipkin and Elam's Broussard 1, another Jefferson County wildcat located two miles west of Sabine and in the McGaffy Survey, has spudded and passed the 400-foot mark.

Texas Gulf Sulphur Company is rigging up on a Jefferson County wildcat to be known as Junker 1. It is located 100 feet south and 1000 feet west of the northeast corner of the Junker tract in the W. H. Smith League.

Believe Commercial Gas Found In Houston County Wildcat Test

Houston.—The opinion has been expressed during the past week that Apex Drilling Company's Thompson Brothers Lumber Company 1, Houston County wildcat, has found a gas of commercial importance at 2328-32 feet.

The operators have set 6⅝-inch casing in Thompson Pine and six miles south of Lovelady, in the John Spears Survey, previously reported a showing of gas 1300-12 feet.

The operators have set 6⅝-inch casing in Thompson Brothers Lumber Company 1 at 2320 feet and are waiting on Christmas tree connections.

Ramsland et al's Pennington 1, another Houston County wildcat which attracted attention early in November, when a test was made of two feet of sand encountered at 1698 feet, is shut down temporarily at 1750 feet. This test is located four miles west of Grapeland, in the R. Harza Survey.

Production at Barbers Hill Holds Steady at 23,000 Barrels

Houston.—While there was only one minor completion at Barbers Hill, Chambers County, this week, daily average production held steady at 23,900 barrels due to improved conditions in some of the recently completed wells.

Several wells are nearing completion at Barbers Hill. Nat Hunter Producing Company's Barber B-3 has set seven-inch casing at 4604 feet after having encountered an oil sand at 4695-4719 feet. This well entered the salt at 1380 feet and went out of it at about 3605 feet. Mills Bennett's Gulf-Barber Fee 1 at latest reports was drilling below 4600 feet. The Texas Company's Lawrence Fee 2 is standing cemented at about 4400 feet after coring oil sand from 4408 to 4423 feet.

Four Projects Under Way In Thompson Dome Field

Houston.—With four projects under way, drilling at Thompson dome, Clear Lake field, Fort Bend County, is active.

Cullen and West and Gulf Production Company's Lockwood 2 has set 6⅝-inch casing slightly below 5130 feet; their Hemphill Trustee 1, located in the A. P. George 619-acre tract, R. Peebles Survey, was drilling at 3870 feet in sand and lime at latest reports, while Gulf Production Company's Myers 1, located 800 feet north of the jointly operated Lockwood-Sharp 2-A, was drilling below 3350 feet in gumbo. Cullen and West and Gulf Production Company are pulling screen to deepen Lockwood-Sharp 1-A, one of the early completions at Clear Lake.

Production of the field for the week ending November 28 was 7800 barrels per day, compared with 4900 barrels per day for the week previous, according to estimates of the American Petroleum Institute.

Activity in Fort Bend County Shows Increase

Houston.—Field activity in Fort Bend County, outside of that going on in the recently developed field of Clear Lake, has shown a steady increase in the past few weeks, the increase being attributable to work in the older proven areas as well as to wildcats.

Among the more important, Stone and Wyman, drilling a wildcat known as Beard 1, between Long Point and Damon, have attained a depth of 1275 feet in the well. Naylor and de Costa have erected a derrick for a wildcat at

Thompson Station, near Clear Lake field. Gulf Production Company is rigging up on Moore 31 in Orchard field and has passed the 2000-foot mark in its Davis 62 at Big Creek. Coronado Oil Company is nearing 4500 feet in its Blakeley 2 at Blue Ridge field.

Pierce Junction Field Gets 700-Barrel Completion

Houston.—Pierce Junction field was extended one location during the past week when Gulf Production Company completed Taylor 33 at 3836 feet for an initial production estimated at 700 barrels of pipe line oil.

Taylor 33 produced 24.7 gravity oil through two small chokes, one of them 19/64-inch, and the other 24/64-inch, with a pressure of 315 pounds. Two joints of 6⅝ inch screen were set on bottom of a full string of 6⅝ inch casing.

Location for Taylor 34 has been staked by Gulf Production Company as 141 feet south of the northwest corner of the J. Hamilton Howe 130-acre tract and 430 feet west at right angles, or 350 feet west of Taylor 22, J. Hamilton Survey.

Tilton et al, drilling Barnes 1 at Pierce Junction field, have logged a showing of oil in shale and lime at 4320 feet, and a production test on this well may be expected within a week.

Shale Last Entry in Log of Wildcat Drilled Near Lissie

Houston.—It was short and sweet, the life of W. H. Wallace's wildcat well in Wharton County. He spudded in on J. N. Lee 1, located 2½ miles west of Lissie early in September, set 170 feet of 10-inch casing a few days later, and drilled on down to 4280 feet by the latter part of November. Shale, the bugaboo of so many wells in the Gulf Coast country, was the last entry on his log—next to the word abandoned. Lee 1 was 600 feet south and 800 feet west of the northeast corner of Section 18, G. H. H. Railroad Survey.

Harris County Test Reports Gas Showing at 2500 Feet

Houston.—Herman Hale 1, wildcat well in Harris County being drilled by Wood R. Alexander et al, was drilling at 2622 feet December 1 after having passed up a showing of gas in sand and shale at 2500-2540 feet.

This test, which was spudded early in September, topped the lower Miocene at 2073 feet. It is located 1058 varas east of the southwest corner of the Littlefield Survey along the north line of the Hanks Survey, thence south 790 varas, thence south 74 degrees 26 minutes west 70 varas.

Jefferson Lake Area Test Gets Oil Show at 1670 Feet

Houston.—Jefferson Lake Oil Company, operating in the Jefferson Lake district of Iberia Parish, Louisiana, has reported through W. J. Krebs, increased showings of oil in Lake Peigneur 25 at 1670 feet. This announcement follows another reported showing earlier in the month at 1335 feet.

Lake Piegneur 25 set 10-inch casing at about 850 feet following a show of oil encountered at 865 feet.

Stanolind Line Loops Provide West Texas-Chicago Movement

(*Continued from page 49*)

porters, respectively, of sweet oil from the Ranger district in Central West Texas was scheduled to take place this week as a preliminary step towards converting the latter's eight-inch trunk line leading north from the Ranger district into the handling of West Texas sour crudes. Daily crude runs from the Ranger district by Stanolind interests had declined to less than 500 barrels, and arrangements have been made for switching the few remaining connections to Illinois Pipe Line Company and Thurber Pipe Line Company. Humble Pipe Line Company's double eight-inch trunk line extending eastward from West Texas and New Mexico will connect with Stanolind Pipe Line Company's line at a point several miles southwest of Ranger. The oil will move north via Graford station, Palo Pinto County, where a double eight-inch line extends into Oklahoma. One unit of this double line will continue to be utilized in handling Mid-Continent grades of crude produced and purchased by Stanolind interests in East Texas and North Texas, while the other will be set aside for West Texas oils.

Refineries of Standard Oil Company (Indiana) have been supplied with a limited amount of West Texas crude from the Winkler County area since the latter developed its first important production. Deliveries were made via tank cars, but early this year a contract was made involving the movement of 5000 barrels daily via Shell Pipe Line Corporation's trunk line system, extending from West Texas via Oklahoma to the Great Lakes region. It is reported that in recent months Winkler crude movement via the above line for Standard Oil Company (Indiana) has been reduced to 3500 barrels daily. This West Texas sulphur oil yields a premium grade of gasoline carrying a natural anti-knock rating that has been found to be very popular with motorists.

Beneficial results for the crude market situation in the West Texas district will follow Stanolind interests' action in withdrawing controlled oil in Winkler and Pecos Counties, as the demand for this crude among major purchasers has been active despite the wide fluctuation in prices during the past year. The above outlined transportation arrangement may also lead to Stanolind Crude Oil Purchasing Company becoming a crude buyer in West Texas. The company has been the most consistent market outlet for small operators in North Texas during the past year, having continually augmented its purchases of outside oil, and has likewise contributed considerable market support in the East Texas field, although depending on Humble Pipe Line Company to gather and transport the crude as far as Mexia district, where the nearest connection is made with Stanolind Pipe Line Company's Great Lakes to Gulf Coast system.

Construction work is well under way on more than 300 miles of loops, consisting of eight-, 10- and 12-inch pipe, along Stanolind Pipe Line Company's system between Healdton and Whiting, Indiana, near Chicago. Added units for each of the 23 main line stations are also included in the program.

Houston.—Rianjo Oil Company, which has been prospecting the Carlos dome area in Grimes County since June, has attained a depth of nearly 3600 feet in its Cutchrell 2, wildcat well located three miles east of the town of Carlos and in the center of a 110-acre tract in the Pat O'Connor Survey.

This wildcat reported a small show of gas in lime rock at 2932 feet in October.

Louisiana--Arkansas Field Notes

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Smackover's Deep Test Now Down 7152 Feet in Salt

Shreveport.—Lion Oil Refining Company and associates November 30 were continuing to make hole in Guy P. Hayes A-9, NE NE Section 4-16-15, Union County, Arkansas, at a depth of 7152 feet in salt. It is the first deep test for the Smackover field; elevation is 96 feet. Due to the absence of insect life in the salt formation, no definite determination has been made of true age. It was encountered at 5967 feet.

An effort to extend production three miles west of the Urbana oil field in Sections 3-18-13 and 10-18-13, Union County, ended in failure last week when Joe Modisette and associates abandoned Webb 1, NW SE Section 6-18-13, as a dry hole at 3620 feet in red shale. Production in Urbana is found around the 3600-foot level. Zepp Oil and Gas Company has formally abandoned Hillman 1, Section 20-10-13, a wildcat in Dallas County, Arkansas, as a dry hole at total depth of 2869 feet in white sand.

Arkansas had no new locations during the last week.

Cements Casing in Test In Rodessa Gas Field

Shreveport.—Seven-inch casing was cemented at 5367 feet during the last week in United Gas Public Service Company's H. J. Bussa 1, Section 33-23-16, Caddo Parish, Rodessa gas field, where the deepest gas or oil production in North Louisiana or Arkansas is obtained. The upper Trinity at the 5500-5600-foot level has yielded several good gassers in the last 15 months, none of the production so far having been pulled, except to drill additional wells. Total depth of H. J. Bussa 1 is 5398 feet; plug will be drilled immediately. Nine and five-eighths-inch casing had previously been cemented at 3625 feet, after 12½-inch surface pipe was set at 375 feet.

Arcadia Drilling Company, in Mason 1, NE SW Section 28-18-6w, Bienville Parish, cored sand showing a small amount of gas in the Nacatosh at 2188 feet last week and later was coring ahead at 2198 feet. A nearby test showed several fourbles of oil in the Nacatosh two years ago but was not completed as a commercial well.

Holdings in Bethany Gas Field Sell for $595,000

Marshall, Texas.—D. Thomason and E. D. Holcomb of Shreveport, among the largest independent operators in the Bethany gas field of Panola County, East Texas, have sold a part of their holdings in that area to National Oil and Gas Corporation, chartered under the laws of Delaware, for a consideration announced by J. G. Strong, attorney for the purchasing company, as $595,000, of which $10,000 is cash. The remainder of the price will be paid as follows: $150,000 out of gas production; $250,000 out of any future oil production that may be secured and 37,000 shares of stock in the company valued at $5 per share. Between 40 and 50 gas producers with an estimated potential recovery of 19,000,000,000 cubic feet are involved. More development of the holdings is contemplated by the new owners, it is announced. Maxwell Stevenson is president and Eugene F. Connors is general manager of the purchasing company, which plans to establish field headquarters at Carthage, Texas.

Zwolle Southwest Extension Records Its First Failure

Shreveport.—The first failure of eight tests drilled in a new mile southwest extension of the Zwolle townsite part of the Zwolle field, was completed during the last week when Stovall Drilling Company abandoned Nulton 2, Section 1-7-13, as dry at depth of 2475 feet in chalk. The preceding seven tests in this section had been oil producers, the most consistent production so far obtained in any part of Zwolle's marl and chalk rock producing horizons.

In the southeast part of the Zwolle field, Eddie Self's Jacobs 2, SW SE Section 1-7-11, was abandoned as dry in chalk at 2549 feet. These were Zwolle's only completions during the last week.

Three new locations were made in Zwolle. Crescent Drilling Company's McCormick 2, Section 2-7-11; Pelican Natural Gas Company's Louisiana Long Leaf 12, SE SE Section 4-7-11; and C. W. Beene and associates' Ezernack 1, NE NE Section 2-7-13, the latter now having rig up.

Casing was set for test of the marl or chalk in four wells in Zwolle during the last week. W. W. Smith and associates cemented six-inch casing at top of the marl at 2037 feet in Hale 1, Section 1-7-13; Lacey and associates cemented six-inch casing at 2301 feet, after topping marl at 2320 feet, in Kate Holliday 1, Section 35-8-12; Lyons and Neely cemented the same sized casing at 2382 feet in Byrd 3, Section 1-7-11; and A. F. Tarver cemented the same size casing at 2378 feet in Cutrer 2, Section 12-7-11, an offset to Cutrer 1 which was abandoned several months ago as a dry hole and is now being standardized, after making oil heads, at total depth of 2550 feet in chalk.

The only other new location for North Louisiana, aside from the three in Zwolle, was A. R. Smith's Horn 1, Section 15-12-16, a wildcat in De Soto Parish; derrick is already up. Calatex Oil and Gas Company have already spudded Agurs 6, Jacob Womack Survey, Panola County, Texas, a new location and late last week were drilling in shale at 1790 feet.

Gulf Abandons Third Wildcat Test in Northern Louisiana

Shreveport.—Gulf Refining Company last week abandoned as a dry hole at 5043 feet in blue gummy shale, the third of three wildcat tests in North Central Louisiana, all drilled below 4000 feet, made on locations resulting from geophysical exploration. The test just abandoned is Tremont Lumber Company 1, NE SW Section 10-9-2e, La Salle Parish. One of the former tests was drilled in Natchitoches Parish, just southeast of the Sabine Uplift, and the other was drilled in Winn Parish. In Tremont Lumber Company 1, 15½-inch surface casing was cemented at 105 feet with a string of 12½-inch set at 940 feet. This test

was approximately six miles south of the Urania shallow field in La Salle Parish, where oil production is obtained at the 1500-1600-foot level.

Two Mississippi Wildcats Abandoned During Past Week

Jackson, Miss.—Two interesting wildcat tests were abandoned in Mississippi during the last week. In Humphreys County, in the delta section, Danciger Oil and Refining Company's Bellgrade Lumber Company 1, NW NW Section 29-14n-4w, was abandoned as a dry hole in black shale at 3014 feet. Black shale was topped at 2694 feet. It is doubtless of Midway age. Three thousand feet was contract depth.

Two miles east of Jackson gas field production, United Gas Public Service Company abandoned McLaurin A-1, NE SW Section 8-5-2e, as a dry hole at 3296 feet in red beds, which were topped at 2937 feet; elevation was 284 feet. Wilcox was topped in this test at 1218 feet, and Midway chalk at 2513 feet, base of this formation being identical with top of the red bed formation. Nine-inch casing was cemented at 854 feet. This test checked about 150 feet low at top of the chalk, as compared to gas producers in the southeast part of the Jackson field.

The fate of Gulf Refining Company's Long Bell Lumber Company A-1, SW SW Section 10-2n-16e, a wildcat test in Clarke County, East Central Mississippi, which showed heavy oil along with salt water at 3700 feet in the upper Eutaw, should be known soon. Saturday, November 28, this test was drilling red gummy shale at 4440 feet; elevation is 380.3 feet. This is in the Tuscaloosa series in which a sand is expected to be picked up between 4450 and 4500 feet.

Four Gas Producers Are Completed at Jackson

Jackson, Miss.—Four gas producers were completed in the Jackson gas field during the last week and one new location was announced. All of the new gassers are in the southeast part of the field in Rankin County.

Grandstaff and associates' East 1, 515 feet north and 1180 feet west of southeast corner of southwest quarter, Section 12-5-1e, completed as an estimated 35,000,000 foot well, gauged 51,000,000 cubic feet of gas, later; total depth is 2382 feet; elevation is 270 feet. Black shale was encountered at 2273 feet and chalk at 2378 feet.

McGuire and associates' Motor 1, N WSE Section 12-5-1e, estimated at first as a 40,000,000 to 45,000,000 foot gasser, later was gauged at 44,319,320 cubic feet; total depth is 2372 feet; elevation is 270 feet. Black shale was encountered at 2309 feet and chalk at 2365 feet. Muse and Muse, Trustees', Wright 1, SE SW Section 12-5-1e, with the same elevation as the other two gassers, was completed at depth of 2381 feet, gauging 53,400,000 cubic feet of gas. Black shale was encountered at 2290 feet and chalk at 2368 feet.

Square Deal Oil and Gas Company's Spann 1, Section 13-5-1e, was completed at depth of 2499 feet, making an estimated 5,000,000 cubic feet of gas daily with a heavy spray of salt water. Chalk was encountered at 2494 feet; a string of 4½-inch casing was cemented at 2495 feet.

Grandstaff and associates' East 1 is a test which got out of control resently while being bailed and ran wild for over 24 hours.

Jackson's single new location last week was James Alexander, Trustee's, Permanent Investment 1, SE SE Section 33-6-1e, Hinds County, which has already spudded; 15½-inch surface casing was cemented at 22 feet.

▼ NEW MEXICO-ROCKY MOUNTAIN AREA ▼

Twin River Structure Test Finds Free Oil in Madison

Calgary, Alberta.—The test well drilled jointly on the Twin River structure, Southern Alberta, by Parco Oil Company, Ltd., and Nordon Corporation, has found a very good showing of free oil in the top of the Madison limestone, and is running casing to cement to test. Commercial production will mean the discovery of a new high grade oil field in rank wildcat territory.

Red Coule Border Well Best Producer of District

Great Falls, Mont.—The recent completion by Alkalta Oil Company, Limited, in the Red Coulee, border field, on the international line, is giving indication of being one of the best wells to be completed in the district. It is estimated that the well is good for at least 200 barrels at present, and this production may be increased as soon as tubing is run.

Northwest Association Asks For Tariff on Oil Products

Seattle, Wash.—Northwest Oil & Gas Association went on record as opposing the flood of oil brought in from South American fields and unanimously voted a resolution calling upon representatives of the various states in the territory of the Pacific Northwest to work for a bill, and for congress to pass a tariff on crude and refined oil imports into the United States, at its convention held here recently.

Seattle, Wash.—A very excellent showing of free oil is reported by Leslie Petroleum Company at its test on the Hoh River structure, in Jefferson County, Washington. Crude is reported to be of a very high degree of gravity and comes from a loose sand at 805 feet. The structure is on the western extremity of the Olympic peninsula.

Osage, Wyo.—One of the best completions to be made in the west extension of the Osage field, Eastern Wyoming, is reported by Federal Oil Company, which completed its No. 1 on Section 15 for an initial natural production of 600 barrels.

Casper, Wyo.—Bids for the purchase of royalty oil accruing to the federal government from leases on government land in the Salt Creek field, Wyoming, are to be opened in Washington, D. C., on December 1. The contracts at present are held by White Eagle Oil Corporation and The Texas Company.

Jackson, Miss.—Mrs. Mamie Hammond, formerly of Oklahoma City, is blocking acreage in Marengo County, Alabama. It is understood here that part or all of the block consisting of several thousand acres will be submitted to one of the major companies.

INTERNATIONAL PETROLEUM IN REVIEW

ROY E. LEIGH, *Foreign Editor, New York*

International Uniformity in Oil Nomenclature Planned

New York.—The national standardization bodies of 21 leading industrial countries have been invited to participate in an international effort to secure greater uniformity in methods of testing petroleum products and lubricants under the auspices of the International Standards Association, according to a statement issued by the American Standards Association to which the secretariat for the work was assigned by the international body. The invitations forwarded to the foreign standardizing bodies asked for the appointment of petroleum technologists as official representatives on an international committee to deal with the subject. The nomenclature of petroleum products will also be studied by the committee.

The widespread commerce between nations in gasolines and lubricating and fuel oils has made the need for international uniformity in nomenclature and in methods of determining the physical and chemical properties increasingly important during the past few years, according to the American Standards Association.

The nations to which invitations were issued are: Australia, Austria, Belgium, Canada, Czechoslovakia, Denmark, Finland, France, Germany, Great Britain, Holland, Hungary, Italy, Japan, Norway, Poland, Roumania, Sweden, Switzerland, Russia.

Austria, France, Germany, Japan, Holland, Hungary, Switzerland, and Russia have already unofficially indicated a desire to participate in the work.

The national standardizing bodies of most of these nations are, together with the American Standards Association, member-bodies of the International Standards Association, which has its headquarters at Basle, Switzerland.

Dr. R. P. Anderson of the American Petroleum Institute has been appointed as the American representative on the international committee. Dr. Anderson is also secretary of the American technical committee on nomenclature and methods of test of petroleum products and lubricants which has been working on national standards on this subject under the auspices of the American Standards Association with the American Society for Testing Materials directing the technical work of the committee.

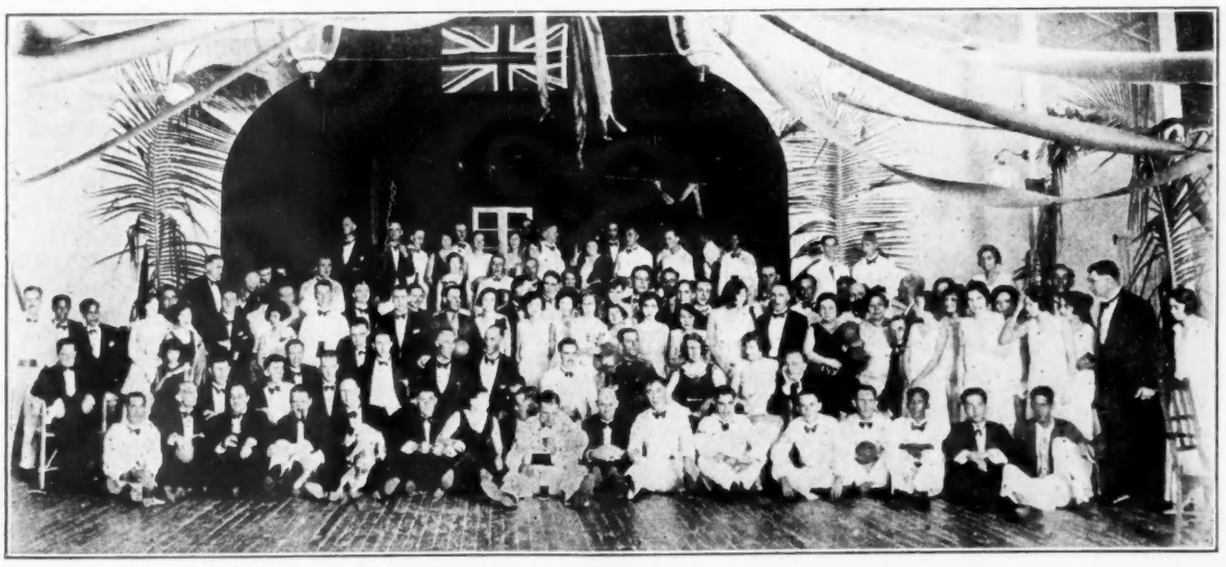
The Institution of Petroleum Technologists, of London, is also an active supporter of this project, its committees having been accupied with the subject for several months past.

Popular Fallacies of Australia Geology

New York.—Dr. W. G. Woolnough, geological adviser to the Australian Government, in reporting his impressions following a tour of inspection of the oil fields of the United States, referred to the spectacularly rapid advances during the last 15 or 20 years; but pointed out that, even in this country, "the advance has been by no means steady and regular."

"The number of original thinkers is comparatively small, and there is a very strong tendency to 'follow the leader.' Some new idea is introduced, and is found to apply to certain particular districts and to certain particular phases. It is enthusiastically accepted; and is extended far beyond its legitimate sphere, until the resultant disappointment causes a reaction, or until some new idea creates a stampede in some new direction. New theories are 'run to death.'"

Listing and refuting a number of popular fallacies regarding the nonexistence of oil in Australia, Dr. Woolnough said that "There is a tendency on the part of many people to believe that there has been some special dispensation



B. R. Emrick, technical adviser, Burmah Oil Company, Ltd., Kohdaung, Burma, mailed in this picture, a flashlight shot of one of the company's club dances.

Dyak engine-man, dressed for a feast; an employee of Sarawak Oilfields, Ltd.

of Providence in favor of the United States in the matter of oil fields. While it is quite possible that the future may show that oil is actually more abundant there than it is elsewhere, the dispensation of Providence in this instance seems to be rather in the direction of a greater amount of energy, ingenuity, and courage in the search with which the people of the country have been endowed. The discovery of such fields as those of Argentina and, very recently, those of the Ural Mountains in Russia, suggests an extension of possible areas, calling . . . for vastly more energy and knowledge than has been exhibited in the past by people outside the United States."

Regarding the popular conception of Australia's barrenness, Dr. Woolnough said:

"There appears to exist in the minds of many Australians a very widespread belief that oil does not and cannot exist in their country . . .

"One of the most widespread, most mischievous, and most erroneous of these fallacies is that this continent is 'too old.'

"Like all continental lands, however, Australia is built up of rock formations representing every individual period of geological history. Some of our rock formations . . . are amongst the most ancient in the world. From these remnants of hoary antiquity we have practically a continuous sequence up to rocks of the most recent periods.

"Petroleum is met with, in different parts of the world, in formations of every age from the earliest rocks, showing evidence in the form of fossil remains of abundant life, down to those of comparatively very recent age. The most prolific producing strata of the Mid-Continent fields of the United States are comparable, in point of age, with the country rocks of Victoria's goldfields. Here let me hasten to add that it is not the age of rock formation which determines its likelihood of containing petroleum, but a variety of other factors, in which age is comparatively of trifling importance."

Amtorg Starts Retrenching

New York.—Amtorg Trading Corporation, Soviet purchasing agency in the United States, has reduced its personnel by 50 per cent and has relinquished one-third of its office space at 261 Fifth Avenue, New York. Explanation was offered in connection with an official announcement made in connetcion with this retrenchment to the effect that Soviet purchases in this country have declined by more than 50 per cent, as compared with 1930. Peter A. Bogdanov, chairman, said in a statement published in The Economic Review of the Soviet Union, that:

"It must be clear to any one engaged in large commercial operations that the basic prerequisite is adequate banking accommodations. These have not been provided in the United States with respect to Soviet business.

"The second principal difficulty is the campaign against the admission of Soviet products to this country, which has resulted in a large decline in sales here. Since foreign trade must necessarily be a reciprocal proposition, any considerable development of trade with this country is out of the question as long as restrictive discriminations are enforced against Soviet commodities."

The decline of Russo-American trade was contrasted with the growth of Soviet business in Europe. Figures quoted by Amtorg officials indicate that Soviet purchases in Great Britain and Germany are showing increases of more than 100 per cent as compared to those of last year; and a large gain is reported in the volume of orders placed in Italy. It is interesting to recall, also, that France is said to be making preparations to enter a trade alliance with the Soviet Union.

Basil Delgass, former vice-president of Amtorg, stated it as his opinion that "it is not . . . so much the absence of credits as it is the absence of money to meet outstanding obligations and to do new business. American credits were considered good enough in 1928, 1929, and 1930 by Amtorg and the Soviet government, although credit agreements with Germany, Great Britain, and Italy were already then in existence. American credits are sometimes even better than the European, because in Europe the Soviet government has to pay part of the money in advance with the order and here the first payment is made against delivery. Amtorg's reference to the long-term credits in Europe is a song of days that are past."

Mr. Delgass further explained that the British Overseas Trade Act, by which the accounts of British exporters to Soviet Russia were guaranteed by the British government has ceased to function; and that "There can be no more credits from Germany to Soviet Russia unless Germany can get new short term loans from abroad, . . ."

"The total amount of Soviet indebtedness to Germany is about 1,100,000,000 marks (approximately $26,400,000), 60 per cent of which falls due in 1932. . . . Under (the British

Overseas Trade Act) the Soviet government owes about $40,000,000, in addition to about $12,000,000 to private concerns. Amtorg Trading Corporation owes between $75,000,000 and $80,000,000 falling due in 1931 and 1932. The financial ability of the Soviet government to meet these obligations can be judged from the fact that the rate of discount of Amtorg paper is now three per cent per month plus one-half per cent interest, which means that buyers of Soviet notes want 65 per cent profit on the invested dollar per annum. . . ."

Oil Seepages Reported From Tierra del Fuego Buenos Aires.—The governor of the Federal penal colony on the southern side of Tierra del Fuego has reported the discovery of promising oil seepages in that vicinity.

Foreign Production Shows Declines New York. — Declines in the crude oil production of the Dutch East Indies and Venezuela are conspicuous among figures covering 1931 operations recently compiled by the Minerals Division of the Bureau of Foreign and Domestic Commerce, at Washington.

Dutch colonial output is averaging only 2,812,000 barrels per month, as compared to a monthly average of 3,366,000 barrels during 1930.

Venezuelan output has fallen from 10,306,830 barrels during January to 8,934,510 barrels during September. These figures compare with a monthly average of approximately 11,473,000 barrels during 1930.

Country	January Barrels	February Barrels	March Barrels	April Barrels	May Barrels
Argentina	780,000	.....	740,000	790,000	1,038,780
Canada	156,659	132,267	128,975	129,217	118,314
Colombia	1,657,701	1,565,425	1,774,454	1,467,429	1,479,452
Ecuador	134,000	130,002	123,031	133,035	164,660
Egypt	178,073	161,399	183,477	175,371	172,095
France	42,777	41,461	46,200	46,361	46,641
Germany	117,894	98,000	98,644	77,833	95,438
Japan	161,207	152,000	168,332	166,234	170,210
Mexico	2,890,902	2,563,000	2,819,000	2,761,039	3,080,000
Persia	3,461,822	3,079,132	3,081,260	3,443,741	4,296,642
Peru	975,000	465,953	1,131,155	914,342	762,624
Poland	390,019	350,630	382,109	356,923	372,155
Rumania	4,197,830	3,646,678	3,860,633	3,882,228	4,182,647
Russia	12,072,900	11,338,082	12,931,826	12,635,077	12,796,000
Sarawak	.....	.....	314,397	309,876	302,295
Trinidad	821,523	744,518	844,534	798,134	788,528
Venezuela	10,306,830	9,329,741	9,749,934	8,872,272	9,111,080

	June	July	August	September
Canada	136,930	108,816		
Ecuador	164,467	173,557	166,544	159,647
Egypt	163,233	162,929		
Colombia	1,435,185	1,491,000	1,512,528	1,414,958
France	44,989			
Germany	96,999	97,937	107,716	
Japan	159,356		160,300	
Mexico	2,960,495	3,129,042	2,841,438	
Persia	4,558,960	4,404,106	4,434,507	4,627,525
Peru	193,799			
Poland	367,549	379,736	374,997	
Rumania	3,962,504	3,990,000		
Russia	12,810,000	12,930,006		
Trinidad	817,761	867,857	891,906	832,483
Venezuela	9,057,434	9,637,053	9,320,896	8,934,510

India: 4,019,713 barrels in first six months; Iraq: 400,000 in four months; Netherland East Indies: 14,063,364 in first five months.

Roumanian Exports To Increase Bucharest. — The Roumanian Ministry of Industry and Commerce has completed a project for the modification and liberalization of regulations governing the export of crude oil, hitherto discouraged as a matter of governmental policy.

Oil producers have received intimation of this change in policy, and several applications for export licenses have been filed with the ministry. Pending revision of the regulations as contemplated, a group of small independent producers organized for this purpose as the "Association of Petroleum Producers Without Refineries," has applied for and received a license authorizing the export of 220,000 tons (approximately 1,500,000 barrels) per annum during a period of three years.

Soviet Oil Output 10 Per Cent Below Quota New York.—Official figures reaching this country from the Soviet Union indicate that the socialized industry is falling about 10 per cent short of its program in production and refining, and that footage drilled is averaging about 25 per cent less than overall quotas established for the Union as a whole.

Azneft and Grozneft, major units operating in the Caucasus, which produce more than 95 per cent of Russia's oil, averaged 92 per cent and 89 per cent of their quotas, respectively, during the period January to May, inclusive. Uralneft, charged with the exploitation of the new field near Perm, in the Central Urals, did better than was expected, reporting the attainment of 114 per cent of its quota. Its output, however, averaged only about 310 barrels per day.

Total output is averaging around 425,000 barrels per day, according to last reports, which is about 12 per cent below the quota set for the mid-year season. Drilling progress is reported at an average of 7590 feet per day in the country as a whole.

World Oil News in Brief

It is reported through official sources that Japanese oil production averaged approximately 6265 barrels per day during the first half of the current year, this average representing a slight increase over output for the same months of 1930.

Lobitos Oilfields, Ltd., of Peru, is credited with an average production of approximately 5900 barrels per day during October.

Output of Anglo-Ecuadorian Oilfields, Ltd., a British company operating on the west coast of Ecuador, is said to have averaged approximately 4400 barrels per day during the month of October.

Tucoyo Oilfields, Ltd., a Venezuelan company allied with Trinidad Leaseholds, Ltd., and operating on the north coast of Venezuela, is credited with an average production of 430 barrels per day during October.

Shore Lines Often Determine Location of Oil and Gas

(*Continued from page 24*)

its waves the entire Sabine mass of land. Formations younger than the Woodbine were then deposited on top of the uplift.

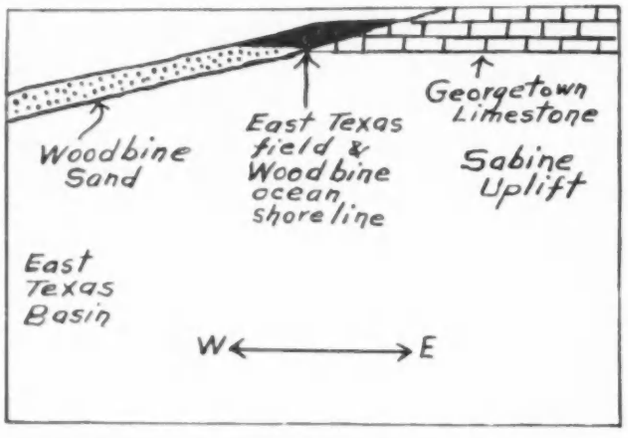
The beach sands of the Woodbine sea, deposited when that sea was halted for a long period on the flanks of the Sabine Uplift, formed a shore line along which exists today the great East Texas oil field. These sands were the final shore line of the Woodbine ocean—no Woodbine sand was laid down east of this strand accumulation. When the waters recovered momentum and again advanced until they submerged the Sabine Uplift different conditions prevailed, and sandstones such as the Woodbine were not formed.

The East Texas field presents a unique type of shore line oil pools. In the fields previously mentioned in this article, the sandy deposits in which oil and gas now occur were likewise formed by a temporary cessation of the advance of the continental sea. However, when the sea again marched forward, sands were again deposited. The thicker sands of the beaches where the ocean remained stationary for so long controlled oil and gas accumulation only by their lenticular shape and their porosity, aided by minor structural developments.

Large Oil Trap

On the other hand, the very nature of the shore line of the Woodbine sea in East Texas formed a closed trap for oil of exceptional magnitude. The Woodbine sand pinched out against the Georgetown limestone, which at that time formed the surface rock of the Sabine Uplift. To the west the Woodbine extended far out into the East Texas Basin. Thus, there was a great wedge of Woodbine sand with its eastward margin in contact with the Georgetown limestone mass of the Sabine Uplift. The eastern edge of the Woodbine formation, that is, the last shore line of the Woodbine sea, was naturally higher than the Woodbine sand deposits out to the west in the East Texas Basin. Later geologic movements accentuated this—that is, lowering the East Texas Basin and raising the Sabine Uplift.

Oil accumulates in the highest part of a body of sand. The shore line of the Woodbine sea, where it abutted the Sabine Uplift, was, then, the natural place for major accumulations of oil. The strong drive of salt water from the large East Texas Basin would force oil disseminated in the Woodbine ever upward toward the highest part of the blanket of sandstone. If the oil were indigenous to the shore line sands and generated there locally, the water drive would concentrate it more and more in the highest parts of the Woodbine.



Diagramatic cross-section showing manner in which the sands of the Woodbine ocean shore line pinched out against the Georgetown limestone of the Sabine Uplift. This abutting of the Woodbine sand against the impervious and compact rocks of the Sabine Uplift gives as efficient a trap for oil as that caused by a fault.

However, as oil was always pushed up into the Woodbine beach line, it encountered a barrier. The sand pinched out against impervious lime. The oil could go no further. It was trapped, and greater and greater amounts of petroleum accumulated behind the oil which was first stopped by the barrier of Georgetown limestone. Structural movements afforded dips in the Woodbine sand itself west of the uplift which made the closure complete. The result was the greatest accumulation of oil of which the world yet has knowledge.

This East Texas oil trap is an extraordinary thing. It has not been encountered before in petroleum geology. The shore line is the place where the oil has accumulated, but the manner in which the Woodbine sand pinched out against the limestone mass of the Sabine Uplift gives the effect of a fault. As at Mexia and Powell the Woodbine sand abruptly stopped at a fault and the oil was forced up against the fault and trapped, so in East Texas the Woodbine sand abruptly stopped at an impervious, impassable barrier, which, although not a fault, formed just as efficient a trap. Had the Woodbine sand continued eastward beyond the shore line where the Upper Cretaceous ocean halted for so long, it is not likely that there would have been an East Texas oil field, at least not such an enormous field. There would have been no such effective, large-scale trap for the petroleum.

Future Shore Line Fields

For a number of years the fields of the Laredo or Mirando region, and more recently the Pettus field have directed attention to the oil and gas possibilities of buried shore lines. It is the East Texas field, however, that has aroused the greatest interest in old beach sand accumulations and trends. When a shore line deposit has been the cause of such a superlative field as the East Texas pool, everyone in the oil industry—company executives, independent operators, drillers, geologists, lease and royalty brokers, pipe-liners, refiners—are all interested in the chance of future fields being discovered along shore lines.

New Fields Likely

Without doubt, new fields will be developed along buried shore lines. The Yegua-Fayette strand line from the Mirando pools on northeast to Pettus and beyond has only been partly prospected. Additional fields and extensions will be found. It is probable that similar shore lines also exist east of the Mirando-Pettus trend, parallel to it and between it and the Gulf Coast.

In other parts of the widely scattered oil-producing regions of the United States, productive buried shore lines may be discovered. The pinching out of sand beaches against buried mountain ridges or continental masses may have formed pools, similar in depositional and structural features, to the East Texas field. It took 30 years of drilling in northwestern Louisiana and northeast Texas, stimu-

lated by the constant finding of new fields from Caddo and Haynesville to Boggy Creek and Van, to bring to light the East Texas pool. More fields may exist along the shore lines of the Sabine Uplift.

A search for oil and gas fields along ancient buried shore lines will give back the wildcatter his old-time gamble. In many cases geologists can do little or nothing to assist in finding shore lines. A productive shore line may lie buried beneath a region where there is no surface evidence of structure, and the logs of previous wells, unless they are numerous, may not reveal any evidence of a shore line deposit of favorable sand lenses.

The "paleogeographical" maps, mentioned at the beginning of this article, give valuable clues as to the possible location of petroliferous shore lines. However, they are for the most part too general for the actual location of a strand line oil field. They can narrow the search to a comparatively small area, for example, a belt of country perhaps 20 miles wide, but even then, it may be a hard task to find oil in this strip of territory. The whole problem is very complex. Shorelines of significance to the oil industry may have been laid down by oceans retreating from the land, as well as by those advancing over the land. The difficulties confronting the geologist are very obvious. The East Texas field was not discovered by geology because the marvelously productive Woodbine shore line was not reflected in disturbances of the surface rocks, nor did the subsurface studies of the Sabine Uplift region indicate a probability of such an oil field—as was opened up—when "Dad" Joiner drilled in the discovery well—his Daisy Bradford 3, Juan Ximines Survey, Rusk County—in October, 1930.

Nor can geophysical instruments do much toward locating buried shore lines. Once a field or wildcat well has been discovered along a shore line deposit, the best (and it seems the only practical) method of operation in trying to open additional pools, is to follow the trend to the shore line. Such "trend drilling" should, of course, be aided by whatever geological information is available—information that accumulates in ever increasing volume as more wells are drilled in a shore line region.

Florida Well to Test Oil And Gas Show at 4004 Feet

PENSACOLA, Fla.—Oil City Corporation has placed an order for a string of 6⅞-inch casing, to be set in its Northwestern Florida wildcat, Walton Land & Timber Company 1, having planned to determine the commercial production possibilities of a broken sand and shale horizon encountered from 4004 to 4012 feet. Mud in the rotary-drilled well was thickened to avoid possibilities of a blowout, gas having come up through the mud when the sand was cored. Examination of the cores showed the presence of oil as well as gas.

The promising formation is Upper Cretaceous in age and has been identified as the Eutaw, which is the equivalent of the Ozan of North Louisiana and East Texas and the basal part of the Taylor formation of Central Texas. Both the Ozan and Taylor have proved productive of petroleum in Louisiana and Texas.

Location of the Florida wildcat is eight miles south of the town of De Funiak Springs, being in Walton County, in the southeast corner of the northeast quarter of the northwest quarter of Section 12-1n-19w. Its surface elevation is 200.1 feet.

The well was spudded March 16, 1931, following a thorough geophysical investigation of the area. Topographically, the country is high, and some fossil beds which were found also indicated the presence of a "high." Aside from those surface indications of sub-surface structure, the petroleum possibilities of the area were also suggested by gas seepages in water wells and springs in the region between Pensacola and the wildcat location.

The geophysical work upon which the location of Oil City Corporation's well was based was carried out in 1930, the field work having been in charge of Ray L. Estabrook of Houston, Texas, and the interpretations having been made by John F. Weinzierl, consulting geologist and geophysicist, also of Houston. The torsion balance was used first, and the magnetometer checked the findings of the former.

The geophysical instruments gave evidence of a long anticlinal fold extending for miles in a northwesterly-southeasterly direction along the western flank of a great regional uplift. Heavy basement rocks constituted the subsurface data upon which the geophysical work was based. The highest point on the identical anticlinal uplift was taken as the location for the wildcat test.

The well had various interesting showings before reaching the present promising horizon. It blew out at 375 feet, had a gas show from 1177 to 1266 feet, an oil and gas show from 2615 to 2626 feet, and a particularly good showing of oil at 3050 feet.

The test revealed the presence of Pliocene formations from the surface to a depth of 175 feet, Miocene from the latter depth to 755 feet, a relatively thin section of Oligocene sediments from 755 feet to 933 feet, and Eocene formations from 933 feet to 2440 feet. Encountering the top of the Upper Cretaceous at 2440 feet, the well continued in the Cretaceous rocks to the present depth.

Should the well fail to develop commercial production after casing is set, it is planned to continue drilling at least to 5000 feet. Next below the Eutaw is expected a formation equivalent to the Tombigbee of Mississippi, the Brownstown of North Louisiana and East Texas, or the Austin of Central Texas, while the next lower formation to be expected is the equivalent of the Tuscaloosa of Mississippi or the Eagle Ford and Woodbine of East Texas and Central Texas.

Other details in connection with the above Florida wildcat were published in THE OIL WEEKLY, October 16, 1931, pages 58 and 59.

Los Angeles.—Barnsdall Oil Company of California announces the removal of its Los Angeles general office on November 28, 1931, to Petroleum Securities building, 714 West Tenth Street, Los Angeles.

Completions for Past Week in U. S. Fields

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CENTRAL EAST TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
JOINER AREA—		
Arkansas Fuel Oil Co., E. M. Bealle (41-ac) 3	7500	3730
Mills Bennett Prod. Co., E. L. Pinkston (108-ac) 1	7000	3658
British-American Oil Prod. Co., Murphy-Kangerga (38-ac) 3	7700	3665
Barney Cockburn et al, N. Green (108-ac) 1	10,000	3817
Droppleman Dev. Co., F. J. Cox (20-ac) 2	3500	3725
Falcon Co., T. O. Mason (148-ac) 6	2500	3641
Golding Murchison Oil Co., W. D. Kinney (336-ac) 5	8500	3668
Humble O&R Co., Ida Holt (99-ac) 1-C	9000	3774
O. R. Holt (60-ac) 3	9300	3795
Miranda Joiner (20-ac) 1	8400	3775
Chas. Pilgren (70-ac) 2	7600	3794
London Pet. Corp. (R. D. Gordon), J. L. Maxwell (1.29-ac) 1	9600	3795
Magnolia Pet Co., J. R. Wright (166-ac) 12	11,000	3654
Mid-Kansas O&G Co., M. M. Cross (531-ac) 6	11,000	3613
Pointer Oil Co., T. O. Wright (9-ac) 2	10,500	3702
R. M. V. Oil Co., L. J. Pinkston (74.3-ac) 2	9200	3632
W. C. Snyder et al, Ben Greer (4½-ac) 1	6500	3675
Sun Oil Co., H. Schuler (72-ac) 2-B	2000	3695
The Texas Co., Guaranty State Bank (160-ac) 5	12,000	3749
A. L. Waller et al, Alford (8-ac) 1	7000	3675
N. Wissman et al, Wilson 1	10,000	3778
Woodley Pet. Co., M. M. McMillan (40-ac) 2	5000	3766
KILGORE AREA—		
Acme Oil Co., Louis Givens (3.37-ac) 1	5500	3653
Artic Oil Co., J. S. King (2-ac) 1	11,000	3653
L. G. Bradstreet & Young, H. C. Minor (30-ac) 1	8000	3675
E. L. Chapman et al, Thelma Williams (150-ac) 1-A	6000	3692
B. DeMayo et al, E. Benson-Tidal 1	4000	3771
Gulf Prod. Co.-Devonian Oil Co., C. E. Christian (100-ac) 2-A	9000	3660
Henson-Long & Kerr, C. O. Christian (3½-ac) 1	9600	3707
Humble O&R Co., J. E. Sexton (70-ac) 2-A	8800	3792
J. O. Oil Co., Faltz 1, Blk 1	8000	3568
Magnolia Pet. Co., M. B. Hughey (80-ac) 3	10,000	3515
Martin et al, Trip Martin (8½-ac) 1	75	3615
W. M. Matthews (was Pat Jackson) et al, L. Martin (20-ac) 1	8800	3718
P. L. Miller et al, W. H. Anderson 1	8500	3562
A. G. Oliphant et al, J. S. Powers (24-ac) 2	10,500	3838
Albert Plummer et al, J. R. Beall (79-ac) 2	9500	3701
Stanolind O&G Co., J. S. Powers (100-ac) 4	6500	3742
The Texas Co., M. T. Cole (220-ac) 4	12,000	3553
H. T. Elder (86-ac) 6	9200	3680
Tidal Oil Co., J. R. Beall (80-ac) 5	8000	3660
LONGVIEW AREA—		
Amerada Pet. Corp., Mrs. C. Bumpas (98.3-ac) 2	12,000	3579
Arkansas Fuel Oil Co., Annie Lee (67.19-ac) 2	9500	3619
Atlantic Oil Prod. Co., Moyers 5	11,500	3600
Moyers 6	11,000	3613
Jas. Wilson (100-ac) 2	7500	3638
Bailey & Trimble, G. Jones (15-ac) 1	11,000	3630
Bond et al, J. R. Fenton (20-ac) 1	7000	3587

For Tabulation and Comparison See Market Section

Company, Well and Location	Initial Production Bbls.	Depth
C. H. Brown et al, W. M. Landers (3½-ac) 1	9000	3714
J. W. Clark, Inc., W. Jones (3-ac) 1	12,000	3515
California Pet. Corp. of Ven., W. M. Clements (60-ac) 2	9000	3748
A. J. Deering (70-ac) 3	5500	3719
Cox & Jake Hamon, Jr., Fee (73-ac) 2	7000	3586
Day & Armstrong, E. L. Walker (Blk. 61) 1	10,000	3606
L. J. Everett et al, Fee 1	11,000	3635
Fain-McGaha Oil Corp., A. Tooke (100-ac) 1	10,000	3640
F-H-E Oil Co., R. Christian (61ac) 2	9500	3650
E. E. Fogelson et al, J. B. Doby (3-ac) 1	7500	3555
Gilcrease Oil Co., A. Fenton (17-ac) 1	8200	3635
C. G. Glasscock et al, T. Snoddy (3.19-ac) 1	9000	3602
Henry Hobbs et al, J. R. Bozeman (Blk. 63) 1	8000	3610
Humble O&R Co., T. M. Armstrong (79½-ac) 3	9100	3599
T. B. Harris (175-ac) 5	9500	3582
L. T. Mackey (95-ac) 1	*	3674
G. W. Willingham (40-ac) 2	9000	3676
Magnolia Pet. Co., N. W. Blackwell (90-ac) 3	13,000	3635
J. W. Free (28-ac) 11	8600	3711
J. W. Free (28-ac) 12	11,500	3702
J. C. McKinley (40-ac) 5	13,000	3644
J. A. Parnell (40-ac) 1	11,000	3571
Margay Oil Corp., J. Freeman (28-ac) 2	6500	3702
Jim McMurray et al, Thad Snoddy (10-ac) 1	10,000	3624
Meridian Pet. Corp., T. W. Lee (53-ac) 2	9400	3644
Mullendore-Berry & Berry, M. Magrill (21-ac) 2	7000	3665
Nash-Windfohr Oil Corp., B. Jones (30-ac) 2	13,000	3638
O. W. Prod. Co., O. F. Smith (28½-ac) 1	8600	3652
O. J. Perrin & Fell, E. E. Anderson (19-ac) 2	15,000	3652
Sabinas Oil Corp., T. M. Collins (59-ac) 3-C	12,000	3662
J. W. Falvey (58-ac) 1-B	12,000	3737
J. L. Sarker et al, W. T. Hall (1½-ac) 1	6500	3604
Selby O&G Co.-Lewis Prod. Co., L. C. Ingram (80-ac) 2	15,000	3545
Shell Pet. Corp., J. W. Akin (100-ac) 1	8000	3676
Stanolind O&G Co., B. Jones (27-ac) 2	10,000	3660
Stanolind-Simms Oil Co., J. C. Persons (146.7-ac) 8	8700	3562
Superior Oil Co., L. C. Ingram (162-ac) 3	10,000	3552
The Texas Co., E. M. Woods (90-ac) 5	8200	3560
Tidal Oil Co., E. M. Nettleton (100-ac) 5, Lse 1	15,000	3532
A. F. Sheppard (114-ac) 1	11,000	3575
A. F. Sheppard (114-ac) 3	12,000	3692
J. O. Whittington et al, Negro Church (3-ac) 1	9000	3522
Yount-Lee Oil Co., Luckel (6-ac) 1	8500	3534
VAN FIELD—		
Pure Oil Co., N. E. Clark (89-ac) 6	7500	2942
A. R. Tunnell (101.2-ac) 8	10,000	2962
Sun Oil Co., I. W. Thompson (26-ac) 5	9500	2936

NORTH TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
ARCHER COUNTY—		
Flake & Harmon et al, J. B. Frerich 2	*	2324
Shappell Oil Co., J. M. Hawley 1	†	2903
WICHITA COUNTY—		
Primrose Ref. Co.-Consolidated Oil Co. et al, Munger 1	*	3913

TEXAS PANHANDLE

Company, Well and Location	Initial Production Bbls.	Depth
GRAY COUNTY—		
Kewanee O&G Co., R. E. Smith 4	350	3276
MOORE COUNTY—		
Texoma Nat'l Gas Co., R. S. Coon 1-M	¶6¼	3167

SOUTH TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
BASTROP COUNTY—		
W. A. Allen's Birmingham 1	*	1220
BEE COUNTY—		
Houston Oil Co.'s Portis 2	500	3905
Mauldin's Mauldin 1	*	3930
BLANCO COUNTY—		
Hardy Sitton's McMillen 1	*	686
CALDWELL COUNTY—		
North's Keith McGee 1	*	2450
COMAL COUNTY—		
Caldwell & Lanier's Byler 1	*	754
KENDALL COUNTY—		
Sitton's Garvin 1	*	1480
KERR COUNTY—		
Evans & Gant's Seiker & Mears 1	*	4031
Jeff Love 1	*	4060

TEXAS GULF COAST

Company, Well and Location	Initial Production Bbls.	Depth
BARBERS HILL—		
Sun Oil Co., Smith 3 (wo)	60	5300
FANNETT—		
Texas Gulf Sulphur Co., Thomas 1	*	835
MARKHAM—		
Hamill & Powers Prod. Co., Myers 1	430	3376
MOSS BLUFF—		
B. Manning's Ruth Sargent 1	*	650
MYKAWA—		
Humble O&R Co., W. H. Erwin 2	*	6400
ORANGE—		
Jefferson Prod. Co., Bland 1	*	2980
PIERCE JUNCTION—		
Gulf Prod. Co., Taylor 33	700	3835

SOUTH LOUISIANA

Company, Well and Location	Initial Production Bbls.	Depth
SULPHUR—		
Union Sulphur Co., Fee 767	1200	3745
EAST HACKBERRY—		
Calcasieu Oil Co., Watkins 29	3100	2997
VINTON—		
Vinton Pet. Corp., Gray 10 (wo)	120	3400

NORTH LOUISIANA

Company, Well and Location	Initial Production Bbls.	Depth
UNION PARISH—		
Interstate Nat. Gas Co., Fee 27, 32-20-3e	2	2223

MISSISSIPPI

Company, Well and Location	Initial Production Bbls.	Depth
RANKIN COUNTY, (Jackson)—		
Grandstaff et al, East 1, 12-5-1e	¶35	2382
McGuire et al, Motor 1, 12-5-1e	¶40	2372
Square Deal O&G Co., Spann 1, 13-5-1e	¶5	2499

CALIFORNIA

Company, Well and Location	Initial Production Bbls.	Depth
KETTLEMAN HILLS—		
Kettleman North Dome Association, Milham 58-2P, 2-22-17	2200	7133
LONG BEACH—		
A. N. Macrate, Macrate 4	125	6460
Richfield Oil Co., Haas 7	100	5102
SANTA FE SPRINGS—		
Bell View Oil Syndicate, No. 6	1000	4925
VENTURA AVENUE—		
Shell Oil Co., Taylor 65	800	5920

KANSAS

Company, Well and Location	Initial Production Bbls.	Depth
BARTON COUNTY—		
Hilligoss et al, Isern 1, sw se ne 12-20-11w	480	3315
COFFEY COUNTY—		
Aikman and Baker, Pvenmire 1, sw c nw 14-22-13e	50	1835
ELLIS COUNTY—		
Davis, Hazlett et al, Weiland 2, nw ne ne 1-13-16w	165	3065
GREENWOOD COUNTY—		
Polhamus et al, Johnson 3, ne c 21-24-12e	25	1563
Marcus et al, Morris 1, nw se sw, 5-24-12e	*	1835
McPHERSON COUNTY—		
Youker et al, Eaton 1, nw c ne 26-19-2w	260	2924
Stearns & Streeter et al, Chinberg 1, se nw nw 15-19-2w	¶4½	2930
Abilene Oil Co. et al, Anderson 3, sw c nw 30-19-1w	1535	3398
Youker et al, Lagree 1, c sw nw 7-19-1w	10	3442
Plains Oil Co. et al, Unruh 2, sw nw ne 6-20-1w	955	3414
RENO COUNTY—		
Shell Pet. et al, Blake 1 (owd) sw se se 23-23-4w	¶13½	3308
RUSSELL COUNTY—		
The Texas Co., Leonard 1, (owd) nw c 6-13-15w	5	3075
Austin Oil Co. et al, Rockefeller 1, se c 6-13-12w	*	3359

OKLAHOMA

Company, Well and Location	Initial Production Bbls.	Depth
CREEK COUNTY—		
Liberty Pipe Line Co., Land 1, nw c sw 12-18-11e	10	1390
O. C. Baltzell et al, Lyons 1, se c ne, 11-18-11e	20	1424
Johnson O&R, Flinchum 1, nw c se sw 11-19-9e	¶5½	2092
Roy Dean et al, Boyd 1, cwl e½ nw 30-19-9e	*	3018
MUSKOGEE COUNTY—		
Robnson Oil Corp., Brown 3, se c ne 18-13-16e	¶1½	530
M. S. Mussellem, Townlot 1, se c sw se se 28-15-18e	*	1218
W. F. Simpson, Sango 1, sw nw nw 17-15-18e	*	1890
OKFUSKEE COUNTY—		
R. C. Walker, Myers 1, cel se nw 3-11-11e	20	2690
OKLAHOMA COUNTY—		
Plains and Capitol P&R, Baum 1, se c nw 15-11-3w (4 hrs.)	4905	6375
Wilcox and Marshall, Keller 1, se c nw nw 10-11-3w (4 hrs.)	4100	6330
OSAGE COUNTY—		
J. E. Cooper, 1, nw c ne se se 26-21-10e	40	1940
PAWNEE COUNTY—		
I. F. Hoss, Peterman 1, se c ne 15-20-9e	12	2206
Burton and Holmes, Cunningham 1, cel nw sw ne 18-20-10e	*	2400
PONTOTOC COUNTY—		
Myers & Atkins, Myers 1, ne se se 21-5-6e	125	1617
TULSA COUNTY—		
J. E. Martin et al, Bunger 2, csl nw nw 27-17-13e	75	1989

EASTERN STATES

PENNSLYVANIA

Company, Well and Location	Initial Production Bbls.	Depth
BRADFORD FIELD—		
Bradford Producing Co., Mitchell 1	15	....
Ione D. Miller & Co., Quintruple 7	6	....
Mose Sullivan, Sullivan 4	6	....
C. W. Sharp & Co., Sharp 2	4	....
V. G. Smith, Smith 5	4	....
Truman & Struckel, Freeman 43	3	....
H. L. Morris, Morris 1	3	....
Morris 2	2	....
Harding & Co., Wright 1	4	....
South Penn Oil Co., Melvin 292	3	....
GREENE COUNTY—		
J. L. Gerard & Co., Gerard 38	4	....
SOMERSET COUNTY—		
American Natural Gas Co., O. S. Miller 1	¶¼	....
W. H. Miller 1	¶1½	....
Maust 1	¶¼	....

NEW YORK

Company, Well and Location	Initial Production Bbls.	Depth
ALLEGANY COUNTY—		
Dermitt & Gilligan 10	7	....
Martin Bros. Childs 1	*	....
Merry & Gibson, Fee 1	2	....
C. M. Lippert & Co., Lippert 8	3	....
J. H. Brahaney, Brahaney 6	2	....
Ryder-Richmond Oil Corp., Fee 94	3	....
POTTER COUNTY—	*	
Hungiville Co., Booth 1	¶6	4953

WEST VIRGINIA

Company, Well and Location	Initial Production Bbls.	Depth
CABELL COUNTY—		
Monickle Gas Co., Jacks 30	¶1	....
General Gas Co., Chambers 1	¶¼	2200
CALHOUN COUNTY—		
Crummies Creek Fuel Corp., Brannon 3	¶½	1747
Evans Oil & Gas Co., Evans 2	¶½	....
Thomas Crawley, Cooper 3	¶¼	....
CLAY COUNTY—		
W. C. Wilson & Co., Herman 1	5	....
KANAWHA COUNTY—		
Winifrede Gas Co., Wrightsville 15	*	....
MARION COUNTY—		
Owens-Illinois Glass Co., Michael 145	¶¼	3044
ROANE COUNTY—		
J. P. Young & Co., Walker 1	¶¼	....

SOUTHEASTERN OHIO

Company, Well and Location	Initial Production Bbls.	Depth
MORGAN COUNTY—		
Bowman Oil & Gas Co., Huffman 5	¶¼	1413
Penn Contracting Co., McAnulty 12	¶¼	1490
NOBLE COUNTY—		
Rich & Vorheis, McLaughlin 2	3	1494
W. W. Marrick & Co., Heiszler 7	4	935
WASHINGTON COUNTY—		
Lish Oil & Gas Co., Lish 4	¶¼	1304

CENTRAL OHIO

Company, Well and Location	Initial Production Bbls.	Depth
BELMONT COUNTY—		
Berbacher & Co., Butler 1	¶¼	1712
CARROLL COUNTY—		
Turner & Co., Scott 1	*	1222
FAIRFIELD COUNTY—		
Westerman Bros. Miller 1	¶¼	720
HOLMES COUNTY—		
Lydic Oil & Gas Co., Close 3	¶¼	931
LAWRENCE COUNTY—		
C. C. Wolfe & Co., Suiter 1	¶1¼	2806
MEIGS COUNTY—		
Scioto Oil & Gas Co., Johnson 2	¶½	837
Joe Kiggins & Co., Jacks 1	¶¼	761
MUSKINGUM COUNTY—		
Ohio Fuel Gas Co., Myers 1	40	3932
Sebaugh 1	¶½	3830
RICHLAND COUNTY—		
Ohio Fuel Gas Co., Pollock 1	¶¼	....
SCIOTO COUNTY—		
Kingsley & Co., Pendleton 1	*	....
STARK COUNTY—		
Brendall & Co., Lake Cable Co 5	¶1½	4437
East Ohio Gas Co., Charles 1	¶6	4416
Wittmer Oil & Gas Co., Dahler 1	¶½	3986
ASHLAND COUNTY—		
Ohio Fuel Gas Co., Cline 1	¶¼	....
BELMONT COUNTY—		
J. L. Jefferies & Co., Burkhart 1	¶¼	1827
COSHOCTON COUNTY—		
Murphy & Co., Myers & Mossholder 1	2	3198
KNOX COUNTY—		
H. E. Perkins, Farmer 1	3	2966
Hulse-Kundtz Inc., Colopy 5	¶¼	659
LORAIN COUNTY—		
Ohio Fuel Gas Co., Handrock 1	¶4½	....
MEIGS COUNTY—		
Stewart & Ross, Staneart 5	*	1136
MEDINA COUNTY—		
Edson & Co., Ross 17	10	415
Frank 30	18	440
Packard 22	10	386
Packard 23	25	391
The Preston Oil Co., Clapp 19	23	448
LICKING COUNTY—		
Wehrle Gas Co., Kreager 1	¶1	2608
PERRY COUNTY—		
Ohio Fuel Gas Co., Berry 1	*	3110
STARK COUNTY—		
Wiser Oil Co., Shuffell 1	1	4389
Boettler & Co., Kirchofer 1	¶7	4392
Brendall & Co., Steiner 2	¶3½	4292
VINTON COUNTY—		
Donahue & Co., Easterling 1	¶1	3523
Kelch Bros, Dwyer 1	¶¼	1003

INDIANA

Company, Well and Location	Initial Production Bbls.	Depth
DAVIESS COUNTY—		
Ben D. Ruble, Lambe 1	*	747
DEARBORNE COUNTY—		
Dearborn Development Syndicate, Steimmutz 1	¶¼	....
HUNTINGTON COUNTY—		
Two Rivers Oil Corp., Buzzard 3	5	....
HARRISON COUNTY—		
Ivyton Oil & Gas Co., Brown 1	¶¼	....
KNOX COUNTY—		
Unknown parties, Prather 1	¶1½	....
L. J. Lloyd, Evans 1	¶3	....
PERRY COUNTY—		
Lane, Beard & Co., Lanman 1	*	550
A. J. Glenn, Glenn 1	*	....
Gustave Walters & Co., Ed. Cassidy 1	*	1436
Roger E. Williams, LaGrange 1	*	....
J. H. McClurkin, Doogs 1	*	....
Conyers & Bugg, Aders 4	30	....
SPENCER COUNTY—		
Hagedorn & Schlachter, Heubscham 1	20	838
I. A. Polhamus, Grass 2	25	....
SULLIVAN COUNTY—		
O. A. Thayer, Bedwell & Lucas 1	*	....
WARRICK COUNTY—		
Elberfield Gas & Oil Co. Downey-Coleman 1	*	....

ILLINOIS

Company, Well and Location	Initial Production Bbls.	Depth
MARION COUNTY—		
Bryan Lee Petroleum Co., Langewich 1	15	....

KENTUCKY

Company, Well and Location	Initial Production Bbls.	Depth
HART COUNTY—		
B. B. Norris & Co., White 1	35	....
Pearson Petroleum Co., Rowletts 1	40	....
Unknown parties, Corkel 1	30	....
Treasure Island Oil & Gas Co., Island 1	50	....
J. B. Miles & Co., Smith 1	35	....
HANCOCK COUNTY—		
Mecca Oil Co., Eastern & Fuqua 1	*	600
WEBSTER COUNTY—		
George Christensen, Curry 1	75	450
Iley Browning, Sutton 1	¶1¼	1505
Garrison & Baker, Thornberry 1	¶1½	1500

MICHIGAN

Company, Well and Location	Initial Production Bbls.	Depth
GRATIOT COUNTY—		
Unknown parties, Waldron 1	*	....
MIDLAND COUNTY—		
Walter L. McClanahan & Co., Struble 2	3300	3550
Pacific Oil & Gas Co., Ottway 1	200	....
The Pure Oil Co., Purtel 2	2.000	3550
Talbot Oil Co., Adams 2	1.200	....
Gordon Oil Co., Noah Skinner 4	700	....
ISABELLA COUNTY—		
T. K. Buzzard, Shehan 100-acres 1	¶2¼	....
WAYNE COUNTY—		
G. E. LeVeque, Randall 1	*	104

Permits Granted for New Wells

▼ ▼ ▼

CALIFORNIA

FRUITVALE—F. S. Jasper, No. 1, 23-29-27.

LOUISIANA

LA FOURCHE PARISH—States Prod. Co., Thibodeaux, Swamp 20, 71-15s-15e, 210 ft s and 100 ft e of nw cor of sec.

RICHLAND PARISH—United Gas Public Service, Houston, Texas, S. W. B. Colvin 1, 34-17n-6e, 1983 ft n and 1886 ft w of center of sec.

SABINE PARISH—Pelican Nat. Gas Co., Shreveport, 4 L. Co. No. 12, 4-7n-11w, 330 ft n and 330 ft w of se cor of sec.

TERREBONNE PARISH—The Texas Co., Shreveport, State Dog Lake 3, 5-22s-16e, 2270 ft s and 450 ft e of nw cor of sec; State Dog Lake 6, 31-21s-16w, 3230 ft w and 960 ft n of se cor of sec.

KANSAS

BUTLER COUNTY—Bennett & Abels, Jones 1, nw ne ne 25-25-4e.

McPHERSON COUNTY — Youker et al, Gratton 1, (owd) se sw sw, 24-19-2w. The Texas Co., Munn 1, (owd) nw c ne 12-20-2w; Washoma Petroleum Co and Shell, Meeks 1, (owd) nw ne sw 7-20-1w.

PHILLIPS COUNTY—J. J. Holl et al, Donaldson 1, c ne 25-5-18w.

ROOKS COUNTY — Seeley, Boyson et al, Schneider 1, nw sw sw 10-8-19w.

RICE COUNTY — L. E. Cress, Sharpe 1, (owd) se c ne 13-20-10w.

RUSSELL COUNTY — Mid-West Exploration Co., Bumgardt 18 (owd) sw nw nw 31-12-15w; Signal Oil Co., Rude 2, nw se se 28-15-13e.

SEDGWICK COUNTY — Gypsy Oil Co., Hamant 5, ne sw nw 14-26-2e; Fisher and Lauck, Trustee 6 (owd) cel ne nw se 19-27-2e.

STAFFORD COUNTY—Mid-West Exploration Co., Allen 29, c sw sw 31-22-11w.

WOODSON COUNTY — Fields and Cross, Wilson 1, cnl nw sw 14-25-13e.

OKLAHOMA

CREEK COUNTY — Bryan Petroleum Co., Bucktrot 2, c sw nw 35-17-10e; N. D. Gentner, et al, Watche 1, se c sw 4-17-10e; O. C. Baltzell et al, Land 2, nw c sw nw 11-18-11e; Michigan Pet. Co., Doty 1, nw c se 1-18-7e; Phillips Pet. Co. and Gled Oil Co., Carter 7, se c sw se 20-19-9e; The Texas Co., Weaver 8, ne c nw ne se 13-19-8e.

HUGHES COUNTY—Perrine et al, Walker 1, c ne ne 15-7-8e.

LINCOLN COUNTY—Kemp, Nunnellee et al, Kannady 1, se sw se 26-17-6e.

MUSKOGEE COUNTY—Robinson Oil Corp., Collins 2, nw c se 17-13-16e.

NOBLE COUNTY—Continental Oil Co., Waltermire 1, c ne nw 33-21-1w.

OKLAHOMA COUNTY—Anderson & Kerr, Gibbons 1, sw c se sw se 34-12-3w; Slick Estate, Long 2, nw c sw se 15-11-3w; Phillips Pet. Co., Ira 1, nw c se ne 22-11-3w.

PAWNEE COUNTY—H. D. Hambley et al, Baker 1, sw nw se 35-20-9e; Swift et al, School 1, sw nw nw 33-20-9e.

SEMINOLE COUNTY—Burke-Greis et al, Catlett 1, sw c 20-7-8e.

TULSA COUNTY — S. W. Anthony, Whetstone 8, se c ne sw 3-16-12e; J. E. Martin et al, Bunger 3, se c sw nw 27-17-13e.

WAGONER COUNTY—W. J. Metzger Wilson 6, sw c nw 30-17-17e.

TEXAS

ARCHER COUNTY — Perkins & Cullum, Wichita Falls, Falls, A, 50, 3, FCSL sur, 450 ft from n and 250 ft from w li Blk 19. Lowe, Delaney & Carter, Rising Star, J. T. Richardson, 40, 1, B 16, J. Scott sur, 850 ft from n and 150 ft from e li n½.

BASTROP COUNTY — Marts & Beavans, Dallas, Wm. Bahn, 200 1, J. Standifer sur, se corner. Sun Oil Co., Dallas, W. R. Powers, 220, 1B, Bastrop Twste sur, 400 ft from n and e lines of Blk 197.

For Tabulation and Comparison See Market Section

BEXAR COUNTY—Gatlin Oil Co., San Antonio, J. Beck, 278, 9, J. Montez sur, 692 ft ne of No. 7.

BROWN COUNTY — Charter Oil Co., Brownwood, E. J. Pierce, 80, 1, S 44, J. Goodman sur, 400 ft from n and 150 ft from w line. M. C. Warren, Fort Worth, A. Newton, 55, 2, G. Stubblefield sur, 360 ft from s and 320 ft from w line.

CHAMBERS COUNTY — R. E. Terrell, Goose Creek, H. Griffith, 9, 2, H. Griffith sur, sw corner.

CHEROKEE COUNTY—Harper - Parkinson, Tyler, J. F. Lowery, 139, 1, B 5, C. B. Jennings sur, 660 ft from n and 150 ft from w line.

FORT BEND COUNTY—Gulf Prod. Co., Houston, J. M. Moore, 31, M. Smith sur, 3816 ft from n and 2432 ft from e line.

GREGG COUNTY—B. De Mayo, Longview, E. Benson, 34, 2, W. P. Chisum sur, 330 ft from e and 205 ft from s line. Turner & Kinsey, Marshall, I. Benson, 4, 1, W. P. Chisum sur, 332 ft from n and 133 ft from w line. J. H. Massie et al, Wichita Falls, M. Fenn, 28, 3, H. H. Edwards sur, 550 ft n of No. 2. Lechner & Hubbard, Dallas, F. Jones, 7, 1, W. H. Castleberry sur, 348 ft from n and 203 ft from e line. J. I. Staley, Wichita Falls, T. Shoddy, 6, 1, Wm. Robinson sur, 438 ft from n and 153 ft from e line. Pederson & Merritt, Duluth, Minn., G. W. Richey, 1, 1, B 3, Red Bird Add., 185 ft from nw and 93 ft from sw line. J. W. James, Kilgore, Kilgore, 1, Blk. 3, Kilgore sur, se corner. M. E. Taber, Dallas, Chapel Sch., 4, 1, M. Tenison sur, center. Louisiana Oil & Ref. Co., Shreveport, La., W. C. Griffin, 71, 1, L. B. Outlaw sur, 330 ft from n and w lines; 2, 330 ft from e and 400 ft from s line. Pilot Oil Co., Longview, Bumpas, 25, 1, W. H. Castleberry sur, 330 ft from s and w lines; 2, 330 ft from s and e lines. Deep Rock Oil Co., Tulsa, Okla., B. Jones, 61, 4, G. W. Hooper sur, 330 ft from n and w lines. Clark & Cowden & McKinney, Duncan, Okla., J. M. Christian, 50, 2, B 12, G. W. Hooper sur, 332 ft from n and 330 ft from w line. Heep Oil Corp., Houston, S. B. Hall, 50, 3, D. Dainwood sur, 585 ft w of No. 1. A. D. King, Longview, R. P. Doby, 5, 1, M. Irwin sur, 160 ft from n and w lines. Sloan & Simpson, Dallas, P. C. Castleberry, 35, 1, G. W. Hooper sur, 330 ft from n and e lines. Superior Oil Co., Dallas, A. Jones, 64, 5, G. W. Hooper sur, 330 ft from n and w lines. Stanolind Oil & Gas Co., Longview, F. M. Fonville, 100, 5, Wm. Tyndale sur, 330 ft from s and w lines; J. J. Flewellen, 200, 2, M. Mann sur, 330 ft from n and e lines; J. J. Flewellen, 200, C2, M. Mann sur, 3750 ft from e and 425 ft from s line; F. M. Fonville, 100, 4, Wm. Tyndale sur, 995 ft from w and 330 ft from s line. Texas Co., Shreveport, La., W. A. Baxter, 96, 3, J. M. Scott sur, 660 ft s of No. 2; 4, 330 ft from s and w lines. Humble Oil & Ref. Co., Houston, G. C. Clemens, 75, 2, D. Sanchez sur, 296 ft from e and 1225 ft from s line; T. B. Harris, 175, 4, W. H. Castleberry sur, 150 ft from n and e lines; H. M. Lawrence, 98, 4, B. Ferguson sur, 1065 ft from n and 330 ft from w line. Atlantic Oil Prod. Co., Dallas, T. W. Lee, 110, 2, D. Ferguson sur, 330 ft from n and w lines; W. T. Burnside, B, 230, B2, F. W. Johnson sur, 480 ft from e and 450 ft from s line; B3, 850 ft from w and 780 ft from n line; M. Turner, 161, 2, W. C. Wakeland sur, 520 ft from e and 330 ft from s line; M. Fisher, 65, 2, W. H. Castleberry sur, 330 ft from n and w lines; E. Burnside, 204, A5, F. W. Johnson sur, 410 ft from w and 1020 ft from s line; J. M. Moore, 420, 3, F. W. Johnson sur, 2858 ft from s and 1050 ft from w line; 4, 1000 ft from w and 800 ft from n line. Prairie Oil & Gas Co., Ranger, W. H. York, 2, M. Dillard sur, 399 ft from nw and 330 ft from e line; J. Elder, 50, 4, Warraner & McCurry, sur, 155 ft from w and 330 ft from s line. F. H. E. Oil Co., Fort Worth, B. C. Christian, 87, 4, G. W. Hooper sur, se corner. Arkansas Fuel Oil Co., Shreveport, La., V. Calvin, 65, 2, J. Hathaway sur, 1233 ft from n and 330 ft from e line; M. B. Hughey, 220, 1, J. Maffit sur, 330 ft from n and w lines. Magnolia Pet. Co., Dallas, A. Hicks, 99, D. Dainwood sur, 330 ft from s and w lines; H. L. Foster, 100, 2, W. G. Painter sur, 312 ft from s and 520 ft from e line; N. Radford, 100, 1, Jno. Blair sur, 330 ft from n and e lines; 2, 330 ft from w and 460 ft from n line; H. L. Foster, 100, 3, W. C. Wakeland sur, 446 ft from e and 330 ft from s line. Barnsdall Oil Co., Tulsa, Okla., S. Ferguson, 35, 3, H. Hokit sur, 330 ft from n and e lines; L. Bingham, 99, 4, Castleberry sur, 330 ft from n and w lines. Empire Gas & Fuel Co., Tulsa, Okla., A. Green, 67, 1, W. C. Wakeland sur, 330 ft from n and w lines. Gulf Prod. Co., Houston, W. Holt, 207, 4, Jno. Blair sur, 1749 ft from e and 122 ft from n line S. Hilburn, 80, 7, A. Norris sur, 818 ft from w and 567 ft from n line; C. Strong, 137, 1, J. Hay sur, 350 ft from n and 330 ft from e line. Yount-Lee Oil Co., Beaumont, J. G. McGrede, 53, A2, Wm. Robinson sur, 140 ft from s and 170 ft from e line. Shell Pet. Corp., Dallas, D. Carr, 100, 1, M. McCurry sur, 330 ft from n and w lines; W. T. Burnside, 160, 4, F. W. Johnson sur, 330 ft from n and w lines. Sun Oil Co., Dallas, M. T. Cole, 264, 2, A. Park sur, 840 ft from n and 1319 ft from w line; J. C. Gray, 114, 1, D. Sanchez sur, 330 ft from n and w lines; W. L. Fuller, 50, 1, D. Sanchez sur, 330 ft from n and w lines.

GRAY COUNTY—Prairie Oil & Gas Co., Ranger, J. S. Morse, 80, 1, S 4, B 26, H&GN sur, 330 ft from n and e lines. Skelly Oil Co., Tulsa, Okla., H. Schafer, 640, 23, S 180, B 3, I-GN sur, 430 ft from n and e lines. Farrell Oil Co., Amarillo, L. H. Webb, 80, 1, S 62, 23 H&GN sur, 330 ft from n and e lines of sec.

HARRIS COUNTY—Gulf Prod. Co., Houston, E. R. Taylor, 560, 34, No. 52 J. Hamilton sur, 350 ft w of No. 22.

HARDIN COUNTY — Paraffine Oil Co., Houston, Heywood, 36, J. Knight sur, 105 ft from s and 35 ft from w line.

HIDALGO COUNTY—B. H. Adams, Edinburg, J. D. Brock, 40, 1, Por. 79, Blk 15, 200 ft from s and e lines.

LAMAR COUNTY — C. W. Davy, Tulsa, Okla., E. H. McCuistian, 405, 1, K. Wood sur, 450 ft from s and w lines.

MEDINA COUNTY—C. J. Webster Oil & Gas Co., San Antonio, Adams, J, 160, 1, No. 25 J. Hillenmeyer sur, 160 ft from e and 190 ft from s line.

PECOS COUNTY—Culbertson Bros., Fort Worth, Monroe, 520, B3, S 39, B 194, GC&SF sur, 1000 ft from n and 1140 ft from e line. G. H. Henderson, Dallas, C. Lefever, 640, 1, S 78, B 8, H&GN sur, 330 ft from n and w lines of sec.

RUSK COUNTY—D. C. Roberts, Tyler, S. E. Gray, 12, 1, I. G. Parker sur, 150 ft from n and 200 ft from w line. R. W. Fair Oil Co., Tyler, Fee, 27, 2, M. J. Pru sur, 330 ft from s and w lines. Wheelock & Collins, Corsicana, Wm. Clayton, 71, 1, L. B. Outlaw sur, 200 ft from n and w lines. Mills Bennett Prod. Co., Houston, E. L. Pinkston, 108, 2, J. B. Cadena sur, 1155 ft from w and 330 ft from s line. D. J. Simmons, Tyler, McElroy, 5, 1, Cordova sur, 218 ft from s and 255 ft from e line. Cordova-Union Oil Co., Fort Worth, J. S. Bean, 134, 6, J. Lewis sur, 660 ft s of No. 5. Woodley Pet. Corp., Shreveport, La., M. M. McMillan, 40, 3, T. J. Martin sur, 450 ft from s and w lines. I. P. O'Neil, Tyler, W. O. Alford, 160, 2, H. B. Dance sur, 292 ft from n

and 330 ft from e line; 1, 330 ft from s and e lines. Roy Lee, Tyler, H. C. Maxwell, 3, 1, F. Cordova sur, 432 ft from n and 168 ft from e line. Stanolind Oil & Gas Co., Longview, J. S. Powers, 100, 4, J. Womack sur, 330 ft from n and w lines; 3, 330 ft from s and w lines; C. O. Christian, 50, 3, W. R. Cooke sur, 690 ft n of No. 2; 4, 330 ft from n and e lines; M. B. King, 50, 4, M. McCabe sur, 330 ft from n and e lines. E. L. Chapman, Fort Worth, Futch & Cooper, A1, J. English sur, 330 ft from n and e lines. Humble Oil & Ref. Co., Houston, J. T. Robertson, 15, 1, T. Grace sur, 330 ft from w and 380 ft from s line; J. Fuller, 115, 5, J. Ellington sur, 450 ft from w and 330 ft from s line; J. H. Arnold, 62, 4, F. Cordova sur, 213 ft from n and 470 ft from w line; J. W. Turner, 125, 6, J. M. Scott sur, 340 ft from n and 330 ft from w line; J. Fuller, 115, 6, J. Ellington sur, 330 ft from e and 336 ft from s line. Magnolia Pet. Co., Dallas, D. Kelly, 40, 5, J. B. Cadena sur, 330 ft from s and w lines; 4, 330 ft from n and e lines; H. P. Leverett, 38, 3, M. McCabe sur, 330 ft from s and e lines. H. L. Hunt, Tyler, J. R. Vinson, 59, 2, T. H. Smith sur, 330 ft from n and w lines. Lewis Prod. Co., Dallas, C. B. Pogues, 80, 1, G. Cooper sur, 190 ft e of center of w line; T. Bean, 46, 2, M. Cogswell sur, 242 ft from w and 175 ft from s line; 3, 355 ft from n and 111 ft from w line. Gulf Prod. Co., Houston, W. P. Keeling, A, 5, F. Cordova sur, 963 ft from e and 330 ft from n line; G. H. Morris, 67, 2, W. R. Cooke sur, 362 ft from n and 330 ft from w line; C. E. Christian, B, 99, 3, W. R. Cooke sur, 330 ft from s and e lines; I. Holt, B, 69, 6, Geo. Berry sur, 330 ft from n and 416 ft from w line. Shell Pet. Corp., Dallas, W. P. Moore, 140, 5, H. Wiggins sur, 330 ft from s and e lines. Sun Oil Co., Dallas, O. W. Knight, 264, 6, J. Vargas sur, 367 ft from e and 330 ft from s line; J. R. Beall, 180, 9, W. P. Chisum sur, 437 ft from w and 1580 ft from s line.

SMITH COUNTY — Sun Oil Co., Dallas, J. D. Henson, 216, 6, J. Vargas sur, 1080 ft from e and 330 ft from s line; O. W. Knight, 264, 7, J. Vargas sur, 330 ft from s and w lines. J. R. Meeker, Fort Worth, L. Bacon, 55, 1, Wm. Sparks sur, 990 ft from n and 906 ft from w line. Liner, Inc., Tyler, W. R. Wolford, 4, 1, Jas. Jordan sur, 150 ft from s and e lines. C. B. Bunte, Inc., Tyler, G. Patterson, 170, 1, S. Dexter sur, 150 ft from n and 330 ft from e line. Magnolia Pet. Co., Dallas, R. Loosier, 137, 5, J. Vargas sur, 990 ft from n and 460 ft from w line.

STARR COUNTY—Jess Williams, Laredo, S. Welsh, 40, 1, Pedernal sur, 1500 ft from nw and 1220 ft from sw line.

THROCKMORTON COUNTY—J. D. Barton, Bryson, H. A. Wilhelm, 82, 1, 651 TE&L sur, 150 ft from s and 500 ft from e line.

TRAVIS COUNTY—Frits Fuchs, Taylor, W. M. Scheiffer, 133, 1, A. C. Caldwell sur, 600 ft from n and 160 ft from e line.

TOM GREEN COUNTY—G. W. Andrews, Dallas, G. W. Lewis, 200, 1, S 75, A. Black sur, 200 ft from s and w lines; S. T. Pugh, 80, 1, S 73, J. Eldridge sur, 200 ft from n and 250 ft from w line.

UPSHUR COUNTY—W. F. Snebold, Fort Worth, J. W. Ray, 117, 1, A. H. Woods sur, 990 ft from w and 950 ft from s line. J. W. Osteen, Longview, O. F. Smith, 10, 2, T. Allen sur, 273 ft from n and 395 ft from e line. Danciger Oil & Ref. Co., Fort Worth, Stinchcomb, 100, 1, M. Mann sur, 354 ft from w and 330 ft from s line. Humble Oil & Ref. Co., Houston, G. W. Johnson, 100, 5, G. W. Hooper sur, 750 ft from n and 330 ft from e line. California Pet. Co., Shreveport, La., T. B. Stinchcomb, 87, 2, M. Mann sur, 150 ft from s and w lines. Atlantic Oil Prod. Co., Dallas, W. H. Moyers, 128, 7, A. T. McGee sur, 330 ft from n and w lines. Shell Pet. Corp., Dallas, C. C. Landers, 110, 7, Wm. King sur, 330 ft from e and 350 ft from n line; W. M. Landers, 64, 2, G. W. Hooper sur, 450 ft from n and 330 ft from e line.

VAN ZANDT COUNTY—Humble Oil & Ref. Co., Houston, A. J. Fowler, 95, 3, Wm. Daniels sur, 450 ft from w and 650 ft from s line.

WARD COUNTY — Bradford & Bentley, Grandfalls, E. Beaty, 80, 1, S 3, B 34, H&TC sur, 330 ft from s and w lines of sec. Burkhart & Moran, Grandfalls, J. T. Sweatt, 20, 2, S 12, B 5, H&TC surf, sw corner.

WICHITA COUNTY — Alvin Abraham, Bridgetown, Waite, 100, 5, BBB&C sur, 1200 ft from n and 1500 ft from e line.

WHARTON COUNTY—Rose Tex Oil Co., Rosenberg, M. S. Floyd, 32, 4, S. F. Austin sur, 200 ft ne of No. 1.

WINKLER COUNTY—S. W. Richardson, Fort Worth, S. M. Halley, 96, 1, S 25, B B12, 330 ft from s and e lines.

WILBARGER COUNTY — Waggoner Ref. Co., Inc., Electra, W. T. Waggoner, C, 40, 5, S 44, B 4, H&TC sur, 217 ft ne of No. 2.

WEBB COUNTY—O. W. Killam, Laredo, A. M. Bruni, 640, 1, Sec. 445 sur, 1667 ft from n and 805 ft from w line; S. N. Johnson, 640, 2, S 1618, Blk. 1, sur, 150 ft from n and 1210 ft from w line.

YOUNG COUNTY—A. H. & S. P. Schmidt, Fort Worth, Routon, 40, 7, No. 22 TE&L sur, 800 ft from w and 450 ft from s line. E. C. Reed et al, Graham, E. P. Tatum, 105, 4, 1908 TE&L sur, 899 ft from e and 1050 ft from n line. United Prod. Co., Wichita Falls, J. K. Jeffery, 27, 1D, 50 TE&L sur, 150 ft from w and 468 ft from s line; J. T. Lowe, 80, 1, 59 TE&L sur, 150 ft from w and 750 ft from s line. W. R. Stafford, Graham, L. C. Brooks, 40, 1, 637 TE&L sur, 150 ft from n and 2090 ft from w line. King Royalty Co., Wichita Falls, J. F. Larimore, 160, 32, 2246 TE&L sur, 957 ft from w and 450 ft from s line s½. D. L. Wolf, Olney, Fee, 25, 1, 165 TE&L sur, 150 ft from n and w lines.

ZAPATA COUNTY—Trevino Oil Corp., Laredo, I. G. Trevino, 40, 13A, S 412, sur, 150 ft from w and 750 ft from s li Blk. 25. O. W. Killam, Laredo, E. Cuellar, 413, 47B, Sec. 277 sur, 1140 ft from e and 450 ft from s line; A. Bustamante, 40, 10, Share No. 5, Comitas sur, 200 ft from e and 150 ft from s li Blk. 11. Geo. Ball, McAllen, M. Gutierrez, 150, 1, C. Redondo sur, center of Blk. 99. Lowe & Rogers, San Antonio, P. P. Benavides, 20, 3, Sec. 11 sur, 450 ft from w and 510 ft from s li Blk. 16. Shankel & Murray, Laredo, E. Cuellar, 80, 2, S 61, B 5 sur, 150 ft from n and 490 ft from w line.

Wildcat Reports from All Sections

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TEXAS GULF COAST

Completions

Company, Well and Location		Initial Production Bbls.	Depth
BELL COUNTY—			
O. O. Alford, Spenhel 2		*	750
Hartman Drlg. Co., Deaver 1		*	530
Fields & Lang, W. F. H. Stubblefield 1		*	400
C. S. White 1		*	239
WHARTON COUNTY—			
W. H. Wallace, J. N. Lee 1		*	4280

AUSTIN COUNTY—Great Southern Drlg. Co.'s F. Schbajas 1, 3 mi s Bleiblerville, S. F. Austin 4 Lgs., set 10 in cas at 120 ft.

BELL COUNTY — Birdwell et al's L. E. Nichols 1, se Belton, drlg 342 ft. W. H. Birdwell et al's Wittes 1, W. Frazier sur, sd at 1000 ft; C. S. White 1, set cas below 400 ft.

BRAZORIA COUNTY — The Texas Co.'s Belcher 2, Manvel Dist., spudded; Cave Heirs 1, Damon Mound Dist., spd. W. D. Southerland et al's C. W. Chapman 1, Lockridge Dist., dr below 523 ft.

BURLESON COUNTY—Marek & Sons' A. Marek 3, 2½ mi sw Tunis, dr 2192 ft.

CHAMBERS COUNTY—Nat Hunter Producing Co.'s Barber B-3, Barbers Hill Dist., oil sn 4720 ft. The Texas Co.'s Lawrence Fee 2, Barbers Hill, stg cmtd on oil sn at 4400 ft, td 4425 ft.

FORT BEND COUNTY—Cullen & West & Gulf Prod. Co.'s Lockwood Sharp 4-A, Thompson dome Dist., dk; Lockwood 2, 5055 ft, sh; Hamphill Trustee 1, Thompson dome, dr 3245 ft. Gulf Production Co.'s Myers 1, Thompson dome, 2210 ft, dr. Stone & Wyman's Beard 1, between Long Point & Damon, sd at 1275 ft. Coronado Oil Co.'s Blakeley 2, Blue Ridge Dist., dr 4214 ft. Naylor & De Costa's Herzog 1, N. Thompson Station, dk.

GALVESTON COUNTY — Yount Lee Oil Co.'s Cade 23, High Island, st dr stem at 4760 ft, w. o. 6 inch; Cade 24, High Island, dr 2537 ft.

GRIMES COUNTY—Rianjo Oil Co.'s Cuthrell 2, 3 mi e Carlos, Carlos dome area, dr 3537 ft.

HARRIS COUNTY—H. H. Givens & Daybault's Lobbit 1, 18 mi w Houston, Addicks Dist., dr gbo 2590 ft. Gulf Prod. Co.'s Taylor 34, Pierce Junction, lcn 350 ft w Taylor 22. Tilton et al's Barnes 1, Pierce Junction, shwg oil at 4320 ft. W. R. Alexander et al's Hermann Hale 1, R. A. Hanks sur, dr below 2622 ft, had show of gas in sn and sh 2500-2540 ft.

HOUSTON COUNTY — Apex Drlg. Co.'s Thompson Bros. Lbr. Co. 1, 6 mi s Lovelady, sd at 2332 ft waiting on Xmas tree.

JASPER COUNTY—Hext Drlg. Co.'s Flournoy 1, 4 mi se Jasper, dr gbo 2351 ft.

JEFFERSON COUNTY—Humble O. & R. Co.'s Nelson 1, 4 mi se Cheek, dr 5743 ft, no show. Pipkin & Elam's Broussard 1, 2 mi w Sabine, dr 500 ft gbo. Texas Gulf Sulphur Co.'s Junker 1, W. H. Smith Lge., ru. Westberry Oil C.'s West 1, near Westberry, sd in gb 600 ft.

LEE COUNTY — A. H. Wheeler et al's Stoltz-Frede 1, 7 mi wsw by w Lexington, reported sn shwg oil 3770-3802 ft.

LIBERTY COUNTY—L. B. House's C. T. Palmer 1, 1 mi s Cleveland, sd at 3620 ft.

MATAGORDA COUNTY—Harvey Smith's Boker 1, Citrus Grove Dist., 4060 ft, li rk. United N. & S. Dev. Co.'s Stoddard 1, Buckeye Dist., W. O. C. S. at 5400 ft, gas show 5475-5510 ft.

MONTGOMERY COUNTY—Humble O&R Co.'s Renn 1, dr 4860 ft. G. W. Strake's So. Tex. Dev. Co. 1, 2½ mi se Conroe, dr 4970 ft. Pevehouse Oil Co.'s Sealey 1, 5 mi w Conroe, dr li 1531 ft.

NACOGDOCHES COUNTY — Creighton Drlg. Co.'s J. N. Stewart 1, Black Jack Community, sd below 3220 ft. Tex-Okla. Corp.'s R. T. Driver 1, 12 mi se Nacogdoches, dr 3320 ft.

ORANGE COUNTY—The Texas Co.'s Pol Kuhn Glass Co. 1, dr 3590 ft.

WASHINGTON COUNTY—Penn Tex Oil Co.'s Kansas 2, Brenham Dist., dr 3538 ft, li and anhy.

ABBREVIATIONS

NOTE—The following is the explanation of abbreviations, signs, etc., used in completion and wildcat reports: *—dry hole, abandoned well; ‡—salt water; †—junked and abandoned; ¶—million feet of gas; abn — abandoned; bbls—barrels; b.s.—basic sediment; cas—casing; co—cleaning out; dk—derrick; dr—drilling; fsh—fishing; ft—feet; in.—inches; lcn—location; m—milling; n, s, e, w—north, south, east, west; r—reaming; sd — shut down; sdtr — sidetracking; sp — spudding; sr — straight reaming; std — standardizing; sw—salt water; td—total depth; ur—underreaming; wo—workover; wosr—waiting on standard rig.

SOUTH TEXAS

ATASCOSA COUNTY—Glen Mathis' Mrs. G. M. Martin 2, Navarro sur, 3 mi s Amphion, 100 ft sw No. 1, sd 2980 ft.

BASTROP COUNTY—W. A. Allen's Birmingham 1, King and Millett sur, sd 1220 ft, dropped as abn. Birdwell et al's White 1, Nancy Roberts sur, 4 mi se Belton, lcn. Humble O&R Co. and Sun Oil Co.'s Powers et al 1, Blk 197, 4 mi ne Bastrop, ru. Texas Dev. Co.'s C. H. Ray 1, Thos. Christian sur, 1½ mi ne Elgin, dr 2532 ft.

BEE COUNTY — Al A. Buchanan's Mary Dorenfield et al 1, James York in Holzmark gas district, dr 1205 ft. C. R. & M. Drlg. Co.'s Ray 1, w of Buchanan & Lefevre lease, John Williamson sur, Damac pool, lcn. J. M. Davis et al's Geo. Ray 1, e offset Buchanan & Lefevre well, Jno. Williamson sur, Damac pool, lcn. Houston Oil Co.'s J. F. Portis 2, A. Smalley sur, Damac pool, sand 3898-3905 ft, flow 500 bbls clean oil on ¼-in choke, set 6⅝ in csg at 3897 ft; J. F. Portis 3, s No. 2, Damac pool, A. Smalley sur, lcn. J. C. Hughes et al's P. H. Martin 1, John Lyford sur, just s Holzmark pool, dr 3436 ft. Humble O&R Co.'s Laura Thompson 1, Garrett Roche sur, dr 4835 ft. J. S. Mauldin's M. Mauldin 1, G. A. Kerr sur, just s Pettus townsite, sd 3930 ft, dropped as abnd. W. L. Morgan et al's Ray 1, just s Weinert lease, Jno. Williamson sur, Damac pool, dk. Nichols et al's Hicks 1, Blk 48, Normana gas field, ru to deepen, td 1990 ft. T. B. Slick Estate's Geo. A. Ray 2, G. A. Kerr sur, in Damac pool, n offset Portis, set surface csg. The Texas Co.'s L. Grammel 1, John Pace sur, nw offset Buchanan & Lefevre well, Damac pool, move on. United Production Co.'s Geo. A. Ray 39, T. Hanson sur, just ne Pettus discovery pool, dr 7377 ft. H. H. Weinert et al's Geo. A. Ray 2, Jno. A. Williamson sur, Damac pool, lcn.

BEXAR COUNTY—J. E. Anderson's S. A. Suburban Irrigated Farms 1, C. Logan sur, near Kirk, 20 mi sw San Antonio on Chicon Lake Fault, dr 1720 ft, Georgetown. S. W. Blount's S. A. Land & Dev. Co. 1, 1 mi e Medina river on Palo Alto rd, 12 mi s San Antonio, dr 400 ft. Jno. T. Callahan's J. H. Buch 1, J. M. McCamley sur, dr 825 ft. Eckert et al's Edwards Heirs 1, Martinez sur, 13 mi se San Antonio, Gonzales road, spud in, move in new rig. Ewell Neill's J. M. Watson 1, Martinez sur, 10 mi s San Antonio, dr 2206 ft. Schneider, Rees et al's Claussen 1, ne San Antonio, SJ&A sur No. 17, dr 1143 ft. C. L. Witherpsoon's Pollock 2, J. M. Rialls sur, Cooksey pool, dr 990 ft.

BLANCO COUNTY—Hardy Sitton's Standeford 1, sur 155, 3¼ mi nw Blanco City, dr 1132 ft, last report; McMillen 1, Williamson, dropped, td 686 ft. Forest Oil Co.'s (Rosenfield et al) Hohenberger, sur No. 94, sd 712 ft. Thomas Hicks et al's Specht & Wiedner 1, Thos. M. Fowler sur No. 27, 2 mi s Twin Sisters, sd 1635 ft.

CALDWELL COUNTY—Joe Bruner's Malone 1, A. Floyd sur, 2 lcns s Salt Flat, prep to deepen, td 2572 ft. T. W. Cole's J. M. Pierce 1, S. Seal sur, lcn. Detroit Texas Dev. Co.'s (M. O. Rayor) Dunlop 2, Solomon Seal sur, 2½ mi ne Luling, dr 1720 ft. North's (Ralph Lewis et al's) Keith McGee 1, Pinchback ¾ mi sw Mills-McMahon well, abn 2450 ft, contract depth. John Storey's Dickerson 1, just ne Salt Flat field, ru. Chas. A. Wagener's Rodenberg 1, ne Dale field, lcn to be made.

COMAL COUNTY—Caldwell & Lanier's T. J. Byler 1, 10 mi s Blanco City, HE&WT sur No. S-894, sd 754 ft, dropped as abn.

DUVAL COUNTY—Cole Pet. Co.'s Benavides 72, Blk 8, sur 19, Mariano Arispe Grant, sand 1754 ft, test sw and oil, sand 1760-1848 ft, coring deeper; Benavides 73, Blk 8, sur 19, lcn. Frank Garvis et al, Schallert 2, Blk 10, Cain & Smith sur 55, Palangana salt dome, ru. Thomas & Tarver's Weider Wood 1, 16 mi from S&O pool, sec 269, Welder-Wood ranch, sand 2152-55 ft, show several thousand ft gas, no water on dst, set 6⅝ in cas 2150 ft, coring 2185 ft.

FRIO COUNTY—Arthur H. Wray's Roche 1, sec 123, A. Hutzler sur, near Big Foot, 1500 ft sw Burns 1, sd 3180 ft.

GOLIAD COUNTY—Benedum & Trees and Plymouth Oil Co.'s Park 1, 2900 ft se Gibson Parks 1, dr 4012 ft. Camp & Stanolind O&G Co.'s Pettus 3, Trinidad sur, ru. Neel et al's Pettus 1, J. M. Pettus tract, Pedro Trevino sur, w Goliad, dr 550 ft.

GUADALUPE COUNTY—Harry Bruner's Jim Sherrill 2, Geo. Allen League, near Staples, sd 190 ft for rotary. Barnhill et al's Hoffman 1, DeWitt sur, between Seguin and Darst Creek, dr 1702 ft. W. M. Eiser et al's Wells 1, ne quarter Jose de la Baume sur, ru. Humble Oil and Refining Co.'s Dan Denman 2-C, William Arrington sur, Camp pool, top Edwards 2522 ft, set 6⅝ in csg 2517 ft, td 2543 ft, put on pump. Pray & Chamberlain's Krueger 1, near Guadalupe river, H. Branch sur, top Edwards 2542 ft, made sulphur water, sd abt 2550 ft. J. M. Scott's E. Drumm 1, C. Campbell sur, near Staples, dr 720 ft. The Texas Co.'s Henry Willie 7, J. C. Darst sur, Darst Creek, dr 2596 ft Georgetown; R. A. Parrish 4, Jacob Darst sur, Darst Creek, dr 2546 ft, Georgetown; Lemmie Anderson 7, J. C. Darst sur, dr 2556 ft, Del Rio.

HIDALGO COUNTY—E. J. Barrett & P. Kanellos' J. D. Brook 1, 15 mi nw Mission, dr 400 ft. Davenport et al's Wells 1, 30 mi w Mission, dk up, move on machinery. La Joya O&G Co.'s W. L. Hart 1, w part of county, prep to spud in. Dayle L. Smith Oil Co.'s Fernandez 5, Porcion 75, 21 mi w McAllen, sand 4010-26 ft, attempt to cut off salt water.

JIM HOGG COUNTY—T. P. Morgan's Fee 1, Share 19, Palo Blanco Grant, lcn.

JIM WELLS COUNTY — Stanolind O&G Co.'s N. A. Hoffman 1, La Trinidad sur, 4½ mi sw Ben Bolt, sd 6464 ft for orders. Vacuum Oil Co.'s Seligson 1, 15 mi s Ben Bolt, to make lcn.

KENDALL COUNTY—Borgett et al's W. Hagg 1, w Avery sur, sd 1250 ft. F. S. Dible's Ellebracht 1, TW&NG sur No. 77, 12 mi n Sisterdale, sd 50 ft. Dixon Oil Co.'s Behr 1, Jessie Wilson sur, 3 mi s Sisterdale, sd 2715 ft. Hardy Sitton's W. B. Garvin 1, D. Richardson sur, 1 mi ne Kendalia, sd 1480 ft, dropped as abn.

KERR COUNTY—Evans and Gant's Seiker and Mears 1, CCSD&RGNR Ry. sur, sec 1605, 2 mi ne discovery, sd 4031 ft, dropped as abn; Jeff Love 1, J. Martinez sur No. 1594, sd 4060 ft, dropped as abn; Jeff Love 2, sec 1592, ½ se discovery, dr 4330 ft; Jeff Love 3, J. Martinez sur No. 1594, lcn; Chester A. Martin's J. E. Young 1, A. E. Bruce sur, ne discovery, sd 1310 ft.

KLEBERG COUNTY — H. Carter's R. H. Simmons 1, sec 7, King sur No. 3, no rept.

LA SALLE COUNTY—Buckley Ranch O&G Co.'s Buckley et al 1, sur 37, Buckley-Walling ranch, sd 504 ft. Salt Lake City Oil Co.'s J. F. Mayes 1, sec 19, blk 20, I&GN sur, sd 1100 ft.

LIVE OAK COUNTY—Henderson Coquat et al's H. Hewitt 1, Thomas Adams sur, sec 4, sd 445 ft. Jim Harper's Fee 1, J. Pointevent sur, ru. Houston Oil Co.'s Sanger 1, Thomas Welch sur, near county line, sd 1520 ft. V. G. Schimmel's (Texas Pet. Co.) C. L. Terrell 1, s Fort City, D. O. Boyle sur, sd 936 ft, sand, show gas.

MAVERICK COUNTY—I. N. Boicourt's Bandera School Land 2, sd 2284 ft. Texas Gas Utilities Co.'s Chittim 8, sec 129, blk 7, I&GN sur, Chittim field, sd 4875 ft.

McMULLEN COUNTY—A. E. Adams' Martin 1, L. E. Melon sur, 15 mi sw Tilden, sd 363 ft. Jacob, Buzzini & Pickett's Jacob 1, Southern gas district, W. H. Jacob sur No. 8, near Live Oak line, sand 756-62 ft, show gas, set cas 750 ft, w.o.c.

MEDINA COUNTY—Frank A. Brown's Jacob Fohn 1, J. F. Tony sur, 8 mi s Hondo, fsh 922 ft. C. J. Webster O&G Co.'s (National) Adams 1, Hillemeyer sur No. 25, near Devine, dr 1100 ft.

NUECES COUNTY—A. C. Erwin's C. M. Trott 1, sur No. 416-500, lcn. Gulf Coast Oil Co.'s Sagarin 1, sec 1V9, Kinney sur, Saxet field, dr 4755 ft; Elder 1, nw Harrel 1, Saxet field, dr 5062 ft. Houston Oil Co.'s M. T. Harrell 1-A, H. B. Shepherd sur, Saxet field, dk. Neal-Milton & Kepley Prod. Co.'s Roark 1, 2000 ft nw Saxet Dunn 8, Saxet field, sand 4840-44 ft, show oil and gas, sw broke in. Saxet Oil Co.'s Weil 5, Saxet field, dr 1020 ft. Stanolind O&G Co.'s (Southern Crude Oil Purchasing Co.) Chas. E. Stratton 1, sec 12, Stratton sub, P. Anchow sur, 6 mi s Agua Dulce, coring 4791 ft, sand show gas.

REAL COUNTY — Evans and Sprinkle's Haby 1, AB&M sur, 7 mi sw Love 1, sec 175, sd 2560 ft.

REFUGIO COUNTY — Blanco Creek Oil Corp.'s Dammann 1, blk 16, Bonnie View Ranch sub, 8 mi s and e Refugio field, sd 4685 ft. G. C. Dixon's P. M. Peck 1, sec 24, Bonnie View Ranch, spud in. Humble O&R Co.'s M. V. O'Conner 1, John Keathing sur, near Victoria line, dr out plug, set 9⅝ in cas 3879 ft, sand 4127-55 ft, show 800 ft oil in 5 min, set cas 4129 ft. Larcro Gas & Pet. Co.'s Strauch 4, blk 21, Refugio, dr and testing 2800 ft. Moody Seagraves Prod. Co.'s St. John 2-A, Refugio sur, dr 5395 ft. Geo. E. Smith's (Mission Drlg. Co.) J. J. O'Brien 3, Refugio town tract, coring 6400 ft. United Prod. Corp.'s W. J. Fox 2-A, Hews and L. Brown sur, Refugio, core oil sand 5864 ft.

SAN PATRICIO COUNTY—Atlantic Oil Producing Company's Welder 1-C, on W. Welder ranch, Blk C, about 10,000 ft sw Aransas gasser, sd 4639 ft for orders. Saxet Oil Co.'s Rachal 18, White Point, J. N. Seguin sur, dr 2212 ft, last rept.

STARR COUNTY—Hooks & Weaver's Kelsey Bass 3, blk 2, sur 6, sub of Porcion 75-76-77, Jurisdiction of Camargo, Olmos pool, sand 515-35 ft, set 6⅝ inch cas 503 ft, w.o.c. Los Olmos & G. Co.'s Kelsey Bass 7, blk 5, sand 348-63 ft, set 6⅝ inch cas 345 ft, wait on cement; Kelsey Bass 8, Sec. 7, Porcion 76, Olmos Park, ru. Rio Oil & Ref. Co.'s (formerly Los Olmos) Kelsey-Bass 1, Olmos Pool, change rig, td 910 ft. San Marcos Drlg. Co.'s (Lon Smith) Ivey 3, sur 8, sub of Porcion 75, dr 410 ft. R. B. Suttles San Roman 1, Porcion 110, dr 380 ft. Jess Williams 1, Welsh 1, Pedernal Grant, ru.

TRAVIS COUNTY — Fritz Fuchs' A. F. Smith 1, Kimbor sur, lcn. C. R. Franklin's J. Wilson 1, A. Alexander sur, dr 1195 ft. Henze & Ray's J. M. Hatch 1, center S. Hamilton sur, dr 565 ft. Bass & Fuch's R. A. Chadwick 1, A. C. Caldwell sur, dk. Waldron et al's T. Cook 1, D. H. Minor sur, dr 1465 ft.

VICTORIA COUNTY—C.R.&M.Co. & C. B. Bunte, Inc.'s, C. R. Keenan 1, center 2500-acre ranch, M. Leon sur, dr 4264 ft. Houston Oil Co.'s Konrad 1, T&NO sur, on Beck Salt Dome, n Victoria, td 5215 ft, pump 465 ft cement in hole, now dr 4960 ft. The Texas

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Company's McFadden 3, John M. Rine sur, nw No. 2, dr 5248 ft. (Note correct depth).

WEBB COUNTY — Carolina Texas O&G Co.'s Barnsley 10, Blk 14, sur 268, Carolina-Texas field, ru. Usher Carson's Webster 4, sur 684, Carolina-Texas pool, ru to deepen from 2618 ft. Cole Pet. Co.'s (Carson) Benavides 2 (4) 12 mi e Laredo, sur 1601, sd 4050 ft. Fansler, Johnson & Peacock's Laurel 1, blk 10, sur 271, Carolina Texas pool, sd 100 ft. O. W. Killam's Bruni 1, sur 445, dr 51 ft; Bruni 22, sur 9, Mariano Arispe Grant, Cole field, dr 2996 ft; S. N. Johnson 2, sec 1618 Reiser district, dr 2890 ft. Geo. S. Marshall's Benavides 1, Carolina-Texas district, sur 683, lcn dropped. Power & Detterheim's Cowan & Goss 1, sur 1606, dr 270 ft.

WILLIAMSON COUNTY — Burns et al's Wilder 1, H. Owens sur, dr 245 ft. Hays and Gee's E. G. Johnson 1, B. C. Low sur, s Georgetown, dr 1582 ft. McLean's et al's Miller 1, Manlove sur, sd 1670 ft. R. S. Wilson's J. S. Speckels 1, J. Jordan sur, 1 mi n Coupland, sd 890 ft.

WILSON COUNTY — August M. Blume's Nickelson 1, G. Diaz sur, 2½ mi s Floresville, sd 1600 ft.

ZAPATA COUNTY—Allied O&G Co. & Allen & Morris, Gutierrez 17, Muckelroy pool, share 4, Comitas Grant, coring 1400 ft. Bob & Richey's Martinez 26, Charco Redondo pool, Blk. 24, W. R. Duke sub, Charco Redondo Grant, spud in; Martinez 27, Blk 24, W. R. Duke sub, Charco Redondo Grant, lcn. Ballard & Mercer's Flores 1, Blk 27, Marks sub, Porcion 37, dr 590 ft. E. K. Bateman's M. Garza Estate 1, Blk 29, sub of Zorro ranch. Claggett's Cuellar 1, Martinez pool, ru. F. H. Etheridge's Joe Bustamante 2, Muckleroy pool, share 35, Fansler Partition, Comitas Grant, skid dk. Geo. M. Gier's M. Garza Estate 1, Blk 18, C. A. Douglas sub, Comitas Grant, Muckelroy pool, dr 250 ft. Grayburg Oil Co.'s C. F. Martinez 1, sec 4, Jennings pool, sand 1937-39 ft, show oil, set 6⅝ cas 1937 ft, w.o.c. O. W. Killam's 47-B, Cuellar pool, sur 277, dr 940 ft; A. Bustamante 10, Blk 10, share 5, Fansler Partition, Comitas Grant, Muckelroy pool, sand 1456-58 ft, 6⅝ inch cas set 1456 ft, w.o.c. Lowe, Rogers et al's Benavides 3, Blk 16, sur 11, 3000 ft ne No. 2, ru. Pray and Chamberlain Prod. Co., Inc.'s, (Whicker) Garza 1-C, sub of Zorro ranch in Los Comitas grant, s extension Muckelroy pool, dk. Shankle-Murray's F. Cuellar 2, Blk 5, sur 61, Martinez pool, dr 1400 ft. South Texas Prod. Co.'s (United) Measles 10, sur 207, Jennings pool, dr 1850 ft, show gas. S. R. & C. Oil Corp.'s Trevino 5-E, (6) Sur 293, Muckelroy pool, ru. Trevino Oil Corp.'s Trevino 1-B, sur 412, muckelroy pool, topped sand 1240 ft, set 6⅝ inch cas, w.o.c. Winch and Billings' Bustamante 3, share 35, Fansler Partition, Comitas Grant, Muckelroy pool, coring 1430 ft.

EAST TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
PANOLA COUNTY—		
Dillon & Bradham, Baldwin 1, Hampton West sur	*	1555
SHELBY COUNTY—		
E. L. Chapman, Pickering Lbr. Co. 1, C. F. Henry sur	¶10	3864

HARRISON COUNTY — Ryan Cons. Pet. Corp.'s J. M. Furrh 1, T. J. Copelain sur, rig. J. M. Gholson's Bivins 1, T. D. Peterson sur, sd 3085 ft. Lloyd Oil Corp.'s Timmons 1, Jno. Findley sur, 10-in 240 ft sd for fuel, 4195 ft lime and anhydrites.

MARION COUNTY—Claunch et al's Laun 1, Henry Fulgram sur, sd 325 ft.

PANOLA COUNTY — Dillon & Bradham's Baldwin 1, Hampton West sur, 12½ cas 43 ft dry abn td 1555 ft. United Prod. Corp.'s Steele 17, B. C. Jordan sur, lcn (Trinity test). Werner 11, D. B. Lewis sur, 15½ cas 383 ft 9-in 2525 ft top Washita 2190 ft top anhydrites 4150 ft base 4625 ft collar and bit recov, dr 5015 ft shale, strks lime. Daisy O&G Co.'s Rucks Hrs. 1, Jno. Palmer sur, sd for water, 3264 ft shale. Moses & Wallace's C. L. Daniels 1, Isabel Hanks sur, sd 650 ft. Hoffer et al's Cameron 1, W. A. Lagrone sur, dk. Davidson et al's Latham 1, Wm. Rich sur, 10-in 260 ft sd 1882 ft chalk. Nelson et al's Williams 1, Jas. Hanks sur, 12½ cas 400 ft sd 2250 ft lime. Stamps et al's Chadwick 1, Wm. Scantleberry sur, rig.

SHELBY COUNTY—E. L. Chapman's Holt 2, Matthew Moore sur, ds stuck lubricating, td 1430 ft. Pickering Lbr. Co. 1, C. F. Henry sur, blew out in June making est 25 mil ft gas, spray fresh water, got from under control, later killed and 365 ft 7-in cas set, 5 3/16 in cas cemtd 3102 ft making est 10 mil ft gas, which shows 320 gallons gasoline per mil cu ft gas, td 3864 ft. McRobie et al's Windham 1, Wm. Leach sur, 296-ac tract, 12½ cas 276 ft top PG 1930 ft 8¼ cas 1750 ft dry slight show gas in chalk 2282 ft base chalk, 2572 ft dry slight oil show, 2686-92 ft 9-ft saturated core at 3360-69 ft arr set 6⅝ cas td 3369 ft. Maulding et al's Frost Lbr. Ind. 1, A. B. Fountain sur, top PG 2900 ft sd 3246 ft. H. H. Gracey's J. A. Morrison 1, Wm. English sur sd 2600 ft. C. H. Tautenhahn's J. C. Bogard 1, Thos. Baker sur, sd 20 ft partly rigged up Ridgeway et al's Polley 1, Domingo Gonzales sur, 10-in 112 ft arr set cas 822 ft. K. H. Francis's Jno. Mims 1, Mary Smith sur, top Midway 847 ft sdtr ds at 2000 ft cemtd 6⅝ cas 2817 ft td 2896 ft. United North & South Prod. Co.'s Windham 1, A. H. English sur, 171.5-ac tract, 12½ cas 376 ft top PG 2004 ft base PG 2602 ft top AC 3198 ft dry slight show oil 3402 ft tested 17 points mud and show oil thru ds 3355-91 ft sd wo 3391 ft. Harry Elliott's Pickering 1, C. H. Patterson sur, 361-ac tract 10-in 108 ft ad wo cement.

OKLAHOMA

ALFALFA COUNTY—T 27n, R 11w, Sec. 12, Smith Bros., Forbes 2, ne c se nw nw, sd 1420 ft.

KAY COUNTY—T 27n, R 2e, Sec. 9, Mummer et al, Sornick 1, nw c se, sd 3693 ft.

GRANT COUNTY—T 25n, R 4w, Sec. 22, Cowden, Collmer 2, ne c se ne sw, sd 5640 ft tools in hole.

ALFALFA COUNTY—T 24n, R 11w, Sec. 14, J. V. Bailey et al, Acre 1, c sw ne, sd 5502 ft.

GARFIELD COUNTY—T 24n, R 6w, Sec. 9, Pulse & Beamer, White 1, se c nw, fsg and straightening hole 5850 ft.

BLAINE COUNTY—T 19n, R 10w, Sec. 13, Washoma, Phillips 1, c nw sw, sd 5120 ft.

LOGAN COUNTY—T 18n, R 3w, Sec. 33, Healey et al, Quier 1, se c sw, sd 3970 ft.

KAY COUNTY—T 28n, R 3e, Sec. 24, W. H. Atkinson et al, Hayes 1, se c ne, rigging up.

PAWNEE COUNTY—T 23n, R 5e, Sec. 15, Cochran et al, McFadden 1, ne c sw, rig. T 20n, R 5e, Sec. 6, W. A. Rookstool, Berry 1, nw c ne sw, sd 1951 ft.

LINCOLN COUNTY—T 17n, R 5e, Sec. 36, W. H. Mote et al, School land 1, nw c, dr 1160 ft. T 14n R 3e, Sec. 2, Hilton Phillips et al, Phillips 1, sw c nw, dr 4485 ft.

CREEK COUNTY—T 14n, R 7e, Sec. 18, Cal Cul Oil Co., Holleyman 1, se c ne se, dr 170 ft.

PITTSBURG COUNTY—T 9n, R 16e, Sec. 32, Pattison et al, McDuff 1, sw nw se, dr 5837 ft. T 7n, R 14e, Sec. 34, Tape Oil Co., Fulton 1, se c sd 1200 ft.

LATIMER COUNTY—T 6n, R 19e, Sec. 16, P. English et al, Weaver 1, c nw se, sd 1542 ft.

ATOKA COUNTY—T 1n, R 13e, Sec. 31, T. J. Campbell et al, Baird 1, nw ne sw, Machine. T 1n, R 15e, Sec. 6, Edgerton et al, Rolland Ranch 2, sw ne sw, Machine.

OKLAHOMA COUNTY—T 12n, R 4w, Sec. 17, C. F. Cuniff, St. Joseph 1, sw c ne sw se, sd 6700 ft.

SEMINOLE COUNTY—T 10n, R 6e, Sec. 19, Bunte et al, Bruner 1, se c nw, rig.

POTTAWATOMIE COUNTY—T 6n, R 4e, Sec. 2, Mid-Continent, Farmer 1, sw c nw, dr 3265 ft.

ROGER MILLS COUNTY—T 12n, R 24w, Sec. 23, Ute Oil Co. et al, Williams 1, c sw, sd 5150 ft. T 11n, R 26w, Sec. 4, J. J. Rock and Palmer, Davis 1, c nw ne, (owd) sd 3240 ft.

CANADIAN COUNTY—T 10n, R 6w, Sec. 1, J. V. Bailey, Robinson 1, c ne nw, sd 150 ft.

WASHITA COUNTY—T 8n, R 19w, Sec. 29, Cooper & Terhune, Blocker 1, nw c dr 2685 ft. T 8n, R 18w, Sec. 21, Burns & Prince, Dock 1, sw c, sd 1106 ft.

GREER COUNTY—T 7n, R 22w, Sec. 1, Good & Dowell, Cliffel 1, nw c, sd 1745 ft. T 7n, R 21w, Sec. 23, H. A. French et al, Murphy 1, sw nw se, sd 1654 ft.

CADDO COUNTY — T 5n, R 9w, Sec. 6, Mid-Kansas & Ramsey, Culp 6, nw c ne, cemtd 6-in 9777 ft dr 10,079, showing oil and gas.

COMANCHE COUNTY—T 4n, R 12w, Sec. 33, Snodgrass et al, Willetts 1, ne c nw, sd 303 ft.

GARVIN COUNTY—T 2n, R 2w, Sec. 24, Malernee Oil Co., Phillips 1, ne c sw, sd 4800 ft.

MURRAY COUNTY—T 1n, R 2e, Sec. 6, Capital P&R, Cutchall 1, se c ne, sd 2432 ft.

COAL COUNTY—T 1n, R 8e, Sec. 35, W. E. McGraw, Stiring 1, ne c se, sd 1846 ft. T 1s, R 8e, Sec. 2, Rabiel Oil Co., Richardson 1, ne c nw, sd 1165 ft.

ATOKA COUNTY—T 3s, R 10e, Sec. 18, Brookshire et al, Guinn 1, nw c, sd 1540 ft.

LOVE COUNTY—T 6s, R 2e, Sec. 27, Batson et al, Cross 1, ne nw ne, c.o. 1632.

BRYAN COUNTY—T 7s, R 10e, Sec. 8, Bryan Oil Co., Childs 1, ne c se sw, sd 660 ft.

LOVE COUNTY—T 8s, R 2w, Sec. 14, Vanvleck et al, Sheldon 1, ne se nw, sd 1139 ft.

NEW MEXICO

BERNALILLO — Norrins Realty, Pajarito Grant, 22-9n-2e, dr 900 ft.

DE BACA—Saldo Dome Oil Corp., sw 6-4n-20e, dr 3205 ft. Landowners Oil Co.'s State 1, ne 16-1s-27e, dr 4635 ft.

DONA ANA—Viking Oil & Dev. Co. 1, nw 26-23-5e, sd 3065 ft.

EDDY—Western Drg. Co., nw 29-17-29, dr 2100 ft.

GUADALUPE—N. M. Prod. & Ref. Co.'s McMillan 1, 24-5n-16e, sd 2600 ft.

LEA—Pacific Coast Oil Co.'s Blakey 1, nw 28-19-38, sd, wait for orders.

LUNA—Angelus Oil Mining Ass'n 1, se 20-21s-10e, co 6171 ft.

OTERO—Ernest et al se 20-26s-7e, fsh tools 1251 ft. Pasotero Oil Corp.'s Evans 1, sw 22-24s-12e, sd 1375 ft.

RIO ARRIBA—Berrenger et al's Hartman 1, ne 8-29n-7w, sd 825 ft. San Juan Pet. Co.'s Gov't 1, se 14-30n-7w, sd 380 ft. Governador Oil Co.'s 1, 12-29n-7w, dr 1950 ft.

ROOSEVELT—Peterson et al's Good 1, ne 32-5s-30e, rig up.

SAN JUAN—Kurz Canon O&G Co.'s Day 1, se 20-28n-10w, dr 3730 ft. Rio Grande Dev. Co.'s 2, 9-29-11, ur cas 1771 ft. Continental Oil Co.'s Rattlesnake 24, 1-29n-19w, chang. to standard tools, td 6066 ft. San Juan Leaseholds' Bowman 3, ne 30-30-15, sd 2685 ft. R. C. Oswell et al, nw 34-30n-11w, run cas to test 1414 ft. Williams et al's Stallings 1, sw 17-25n-15w, sd 150 ft. Ortega et al's Westwater 2, ne 24-31n-18w, abn 2190 ft. Dorothy Oil Co.'s Terwilliger 2, se 29-30-9, sd 1750 ft.

SANTA FE—Jones, Owsley et al, 5-10n-9e, dr 420 ft. Barton Ass'n, sw 6-10n-7e, dr 140 ft.

SAN MIGUEL—Starr Oil Co.'s Adams 1, ne 25-17n-16e, sd for orders 5090 ft.

TORRANCE—Estancia Valley Carbon Dioxide Dev. Co.'s DeHart 2, se se 12-7n-7e, sd 495 ft.

WYOMING

CARBON—Midwest Refining Co., U. P. 27, 27-11-81, co at 3860 ft. Prairie O&G Co., Bunker Hill 1, 29-27-87, dr out cem 6147 ft, dr ahead.

CONVERSE—John Ackard, se 24-33-72, dr 1750 ft.

CROOK—Northwest O&G Co., 6-54-60, td 1585 ft, last report.

FREMONT—Wiebolt et al, 35-33-99, dr 1900 ft. Ward O&G Co., 28-34-90, fighting water, td 2530 ft. Yellowstone Oil Co., sw 14-38-94 resum.

LINCOLN—Wyo. Prod. Co., 14-24-113, td 1700 ft.

NATRONA—Midwest's 11, nw 32-34n-77, to res. 5340 ft. Midwest's Midway 1, ne 23-35n-79w, putting on pump 5192 ft. Summit Oil Co., 21-33-80, set cas 1387 ft. Wyo. Imperial Oil Co., se 13-33-79, rig up.

NIOBRARA—Globe Pete Corp., 2-39-61, td 248 ft, last report.

SHERIDAN—R. & D. Oil Co., 21-57-87, no report.

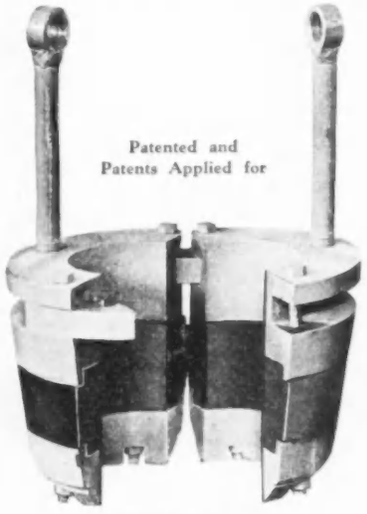
SWEETWATER—Vermillion O&G Co., sw sw 16-12n-99w, ur 8¼-inch at 4685 ft.

UINTA—Doheny interests, 6-14-118, sd 3216 ft for winter.

WASHAKIE—Ohio Oil Co., lot 14, 19-45-92, dr 8550 ft in Sundance, no showings. Bales Oil Trust nw 31-48-80, sd for repairs 1100 ft.

WESTON—LeFaivre Oil Synd., se 29-45n-

Demand A TESTED HEAD



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HOUSTON . . . . . TEXAS

68w, hauling in 12¼-inch at 1800 ft. Julius Peters et al, Witzell 1, se nw 30-46-64, dr Muddy at 3400 ft. Stockade Anticline Synd., 32-45-60, dr. Gose Oil Synd., Gose 1, 28-47-65, dr 5050 ft, last report.

MONTANA

CARBON—Corbett Roy. Co., sw se 1-6s-23e, dr bel 450 ft. Jack Creek Oil Co., 1, se 15-7s-23e, td 1325 ft. Ohio Oil Co., Kuchinski 1, 15-7s-21e, spudding.

CARTER—E. T. Moorehead, sw 36-4s-57e, dr 100 ft.

CASCADE—Buscher & Cassady, Johnson 1, se 19-22-3e, fighting cave, td 1015 ft. Charles Merz et al, Sheffelt 1, sw 4-21-4e, run pipe 440 ft.

GALLATIN — Mont. Gas & Pete Corp., Adams 1, 35-1n-2e, run pipe to test show at 527 ft. Gallatin Valley Oil Co., nw 1-1-4, dr 650 ft, last report.

FERGUS—Melton Corp., 1, sw 24-21n-17e, dr bel 3050 ft. Landheim-Romunstad 2, ne 3-17n-20e, set 6⅝-inch at 2116 ft, dr 2575 ft.

GLACIER—Fulton Pete Corp., Blackfeet 1, ne 28-38-12w, dr 2814 ft. Browning Dev. Co.'s Reickhoff 1, ne 3-34-6w, rigged. R. C. Tarrante et al, Haglund 1, sw 13-34-6w, dr 2520 ft.

GOLDEN VALLEY — Golden Valley Oil Co., 28-6n-22, to res 1140 ft.

LIBERTY—Peoples O&G Co., First National Bank 1, ne 17-36-6e, sd 2000 ft. Northland O&G Corp., Yurman 1, sw 32-33-5e, sd 3705 ft, wait cas. California Co., Ross 1, ne 3-33-6e, spd.

SWEETGRASS—Shoshone Cons., nw 23-2n-15e, straightreaming around 5500 ft.

TETON—Andover Oil Co.'s Carlson 1, 5-24-4w, stand 150 ft. California Co.'s Sullivan 1, nw 34-27-7w, dr 2660 ft. Earl Oil Corp., Gad 1, se 22-22-8w, fight cave, td 3780 ft.

TOOLE—Liquid Gold Oil Co.'s Elbert 1, ne 25-36-12, to run 5-inch to s.o.w. 2480 ft. Oregon Oil Synd., se 20-36-2e, ur pipe to carry to 1710 ft. Western Natural Gas Co., nw ne 26-37-4w, location.

YELLOWSTONE—Pan-American Oil Synd., 23-2s-24e, below 2360 ft. Peter Antonioli 1, ne ne 21-2n-25e, dr 2150 ft, 10-inch hole.

COLORADO

ADAMS — Hills Dome Lease Dev. Co., se 27-38-64w, rigging up to deepen from 3750 ft.

ARAPAHOE—McDeb. Drlg. Co., Fitzsimons 1, ne 7-4n-68w, sdtr bit at 5850 ft.

BOULDER—C. T. Ahlstrand's Woodley 1, ne 8-3n-70, prep to set pipe at 485 ft. Julius Williams 1, 6-1n-71w, dr 900 ft.

ELBERT—Belmont Oil Co., sw 27-3s-64w, sd 3745 ft to standardize.

EL PASO—Gulf States Oil Corp., Cannon 1, ne 10-16s-68w, prep to res at 1125 ft.

GRAND—Oil Minerals Lands, Inc., McElroy 1, sw 14-2-81w, stand 545 ft.

JEFFERSON—Ruby Hill O&G Co.'s Braden 1, se 24-4s-59w, cem 6⅝-inch at 4100 ft, co.

LA PLATA—McGarr Pete Co.'s Pinon Mesa 1, ne 34-33n-12, rig up. Klem Pete Corp.'s Olbert 1, se 9-26n-12w, stand 3125 ft. J. W. Irwin & Co., Deescher 1, nw 29-33n-12, dr 3170 ft. Phipps et al, nw 9-33-13, dr 470 ft, last report.

LARIMER—Mayer Oil Co., No. 1, Reed, nw 28-4n-69, 8¼-inch at 2400 ft, sd. P. J. Mosher, Inc., Meade 1, sw se 17-4n-69, sd 60 ft. W. Mosher et al, Foster 1, se 17-4n-69w, dr 1265 ft. Consolidated Drlg. Co., Foster Motz 1, 17-4n-69, dr 1000 ft. Raddatz-Travis Corp., 1, ne 7-4n-69w, dr 1550 ft, small show of gas.

LINCOLN—Eastern Colo. Oil Corp.'s State 1, 36-14n-57w, fsh tools 3449 ft.

MOFFAT—Ohio Oil Co., Bogenschultz 1, se 9-6n-91, material on the ground.

MORGAN—Ind. Terr. Illum. Oil Co., State 1, ne 16-1n-57w, plug back from 5905 ft to 5511 ft, sd for repairs. Badger Creek O&G Co., sw 2-2b-57w, stand 1340 ft. Colo. Ass. Oil Co., Pumphrey 1, se 14-4n-58, cored to 5850 ft, sd for orders. Tulsa-Fort Morgan Oil Co., Smith 1, nw 18-6n-60w, lcn. Prairie O&G Co., Mortier 1, nw 2-5n-60w, sd 6548 ft, to run 7-inch on top of Dakota at 6532 ft. Myers et al, Lee & Lusby 1, sw 6-2n-56w, to spud Dec. 20.

PUEBLO—Anchor Oil Co., Esely 1, sw 35-22-67, dr 815 ft.

PARK—South Park O&G Co., Milligan 1, se 13-8s-76w, co after run cas 2606 ft. South Park Oil Co., Esche 1, ne 5-9s-76w, sdtr spear at 2470 ft.

RIO BLANCO—California Co.'s Raven 1, se 20-2n-102, dr 3157 ft. Magnolia Pete Co.'s Maddock 1, se 9-2s-96w, co at 2031 ft.

ROUTT—Mid-Colo. Pete Corp., Omholt 1, ne 29-4n-87w, dr 1575 ft.

WASHINGTON—Frank E. Kistler's Middlemist 1, se 14-4-56, stand with 2½ inch set at 1503 ft.

WELD—Reiter-Foster's Johnson-Juhl 1, 14-6n-61w, dr out cem 6734 ft. Reiter-Foster's Wilson 1, se 24-6n-61w, co 318 ft, td 420 ft. Aztec Corp., State 1, se 16-6n-61w, spd and sd. 115 ft. Retter Oil Co., Smith 1, 14-1n-68w, cem 12½-inch at 1377 ft. Conoco, Gadbois 1, sw 24-5n-61w, fsh, td 6593 ft. Greeley Oil Co., Gadbois 1, 1-B, nw 25-6n-61w, cem 6671 ft. Gulf States Oil Corp., Bengston 1, nw 6-4n-63, lcn. Frank E. Kistler, Niles 1, se 13-6n-61, cellar. Prairie O&G Corp.'s O'Toole 1, ne 33-7n-62w, dr 4200 ft. Tulsa-Fort Morgan's Smith 1, nw 18-6n-60, lcn.

NORTH LOUISIANA

Company, Well and Location	Initial Production Bbls.	Depth
SABINE PARISH (Zwolle)—		
Eddie Self, Jacobs 2, 1-7-11.....	*	2549
Stovall Drilling Co., Nulton 2, 1-7-13	*	2475
LA SALLE PARISH—		
Gulf Ref. Co., Tremont Lbr. Co. 1 10-9-2e	*	5043

BIENVILLE PARISH — Arcadia Drilling Co.'s Mason 1, ne sw 28-18-6w, 12½-in cas 39 ft, cored sand with small gas show 2188 ft, coring 2198 ft.

BOSSIER PARISH — Andrews & Davlin's Nattin 1, 15-22-14, 4½-in cas 2882 ft, sd 2890 ft. Dr. Harkins et al's Newell 1, 12-19-11, coring 1669 ft, (corrected depth). D. L. Perkins et al's Ardis 1, 13-15-11, top Nacatosh 944 ft, sd 1004 ft.

CADDO PARISH—United Gas Pub. Serv. Co.'s H. J. Bussa 1, 33-23-16, 12½-in cas 375 ft 9⅝-in cas 3625 ft, cemtd 7-in cas 5367 ft, td 5398 ft, (5500 ft test). Pelican Nat. Gas Co.'s Cooper 1, 29-18-14, ta 3648 ft, red shale and lime.

CALDWELL PARISH—Monroe Pet. Corp.'s Burton 1, 36-12-2e, sd acct titles 2986 ft. Carter Bell et al's Taylor 1, 17-14-4e, 12½-in cas 110 ft, sd.

CLAIBORNE PARISH—United Gas Pub. Serv. Co. et al's Dobbins et al 1, ne sw ne 12-19-6w, sp, dr 30 ft.

DE SOTO PARISH—A. R. Smith's Horn 1, 15-12-16, dk. Rellit O&G Co.'s Cannon Hrs. 1, 12-11-16, top chalk 1476 ft, base chalk 1810 ft, 6-in cas with packer 1470 ft, dry, wo, td 1965 ft. E. T. Oakes' Johnson 1, 30-13-15, base chalk 2160 ft, top another chalk 2815 ft, sd, wo, 3038 ft, lime. Walters & Nicholson's Jim Guy 1, 3-11-13, sd 1260 ft.

LA SALLE PARISH—Gulf Ref. Co.'s Tremont Lbr. Co. 1, ne sw 10-9-2e, 15½-in cas 105 ft, 12½-in cas 940 ft, dry abn, td 5043 ft, blue gummy shale.

NATCHITOCHES PARISH—Midwest Prod. Co., Inc.'s Brown 1, 31-11-10, 10-in cas 40 ft, dr 1175 ft. C. M. Talley et al's Talley 1, 29-11-10, sd 1380 ft. J. W. Cooper et al's 2-A, 35-11-10, sd 1515 ft. Gerson et al's Smith Island 1, sw nw sw 11-10-8w, sd 50 ft. R. A. Keator's Stephens 1, nw nw 25-10-6w, 12½-in cas 178 ft.

OUACHITA PARISH—S. C. Wilson et al's W. W. Williams 1, sw se 5-16-1e, 12½-in cas 180 ft, dr 800 ft.

RED RIVER PARISH—Mack Jourdan Co's Lockett 1, 33-13-10, 6-in cas 2350 ft, wosr 2750 ft.

RICHLAND PARISH—National Gas Co.'s Singletary 1, 20-18-7e, sd 2515 ft.

SABINE PARISH—J. J. Kean's Belton 1, nw se ne 31-9-13, elev 233 ft, 8-in cas 1590 ft at top chalk, 550 ft oil in hole, wo, td 2039 ft chalk. H. W. Perritt's Bowman-Hicks 6, se ne 2-7-12, 10-in cas 100 ft, sd 1900 ft. A. H. Thames' Edwards Est. 1, 8-8-13, sd 1200 ft. R. L. Gay, Tr.'s, Long-Bell A-1, nw nw 10-8-13, dr 3946 ft shale and lime. Coates Pet. Co.'s Bowman-Hicks 1, ne sw 2-7-12, oil show in Wilcox 1670 ft, wosr 2441 ft. Hale 3, 1-7-13, sp 10-in 84 ft, dr 1600 ft. Stille 1, nw se 35-

8-13, lcn. Hill 1, se se 35-8-13, lcn. Dengail Oil Co.'s Nulton D-2, nw ne 1-7-13, lcn. Ohio Oil Co.'s Bowman-Hicks 9, 35-8-12, lcn. Bowman-Hicks 10, 35-8-12, lcn. Bowman-Hicks 11, 2-7-12, lcn. Bowman-Hicks 12, ne ne 2-7-12, 10-in cas 221 ft, 6⅝-in cas 2208 ft, wosr 2271 ft. Bowman-Hicks 13, ne ne 35-8-12, 10-in cas 196 ft, dr 2000 ft. Hudson & Bird's Walden 1, sw ne 26-8-11, 10-in cas 100 ft, arr res 1800 ft. Gerhig Co.'s W. F. Skinner 1, nw nw 16-8-11, 10-in cas 105 ft, dr 1800 ft. Hawkins & Antoon's Newton 1, 1-7-11, wosr 2610 ft. L. K. McGuffin's Byrd 1, 1-7-11, sd 400 ft. Zeke Lohman's McCormick 1, ne sw 2-7-11, sd 1606 ft. Ben Merritt, Tr.'s, Byrd 2, 1-7-11, 10-in cas 88 ft, dr 1000 ft. Roy Baker's Sabine 1, 11-7-12, wosr 2548 ft. Gautier et al's Meshell 1, 30-8-12, wosr 2530 ft. Loring Oil Co.'s Bowman-Hicks 18, sw nw 15-7-12, 15¼-in cas 100 ft, tested dry 4017 ft, 9¾-in cas 3950 ft, dr 4180 ft. G. M. LeGrande's Peterson 1, sw ne 34-7-13, 10-in cas 40 ft, sd 2243 ft. A. F. Tarver's Cutrer 1, 14-7-11, wosr 2550 ft. Cutrer 2, 12-7-11, 10-in cas 100 ft, cemtd 6⅝-in cas 2378 ft. Lyons & Neely's Byrd 3, 1-7-11, 10-in cas 100 ft, cemtd 6-in cas 2382 ft. Eddie Self's Jacobs 2, sw se 1-7-11, 10-in cas 100 ft, 6-in cas 2404 ft, dry abn td 2459 ft, chalk. Stovall Drilling Co.'s Nulton 2, 1-7-13, 10-in cas 100 ft, 6-in cas 2059 ft, dry abn td 2475 ft chalk. O. J. Baird's Duggan 1, se nw se 14-7-11, 10-in cas 100 ft, add res 2000 ft. Davidson & Griggsby's Martinez 1, nw se 2-7-13, rig. M. J. Kissick's Brown Lbr. Co. 1, nw ne 1-7-11, 10-in cas 100 ft, dr 1300 ft. Exchange Pet. Co.'s La. Long Leaf 1, ne nw 35-8-11, 10-inch cas 102 ft, dr 1602 ft. W. F. Lacey's Holliday 1, se nw 35-8-12, top mark 2320 ft, cemtd 6-in cas 2301 ft, td 2327 ft. Crescent Drilling Co.'s McClanahan 1, 4-7-11, dk. McCormick 2, 2-7-11, lcn. Pelican Nat. Gas Co.'s La. Long Leaf 11, ne nw 10-7-11, arr set 6-in cas 2228 ft. La. Long Leaf 12, se se 4-7-11, lcn. W. W. Smith et al's Hale 1, 1-7-13, cemt 6-in cas at top marl 2037 ft, td 2041 ft. Beene et al's Ezernack 1, sw ne ne 2-7-13, rig.

TENSAS PARISH—A. R. Willis' Curry 1, 39-11-12e, sd 3545 ft. L. A. Duvall et al's Martin Jacoby 1, ne ne 1-14-10e, sd 3060 ft. Stovall Drilling Co.'s Miller 1, ne sw 18-10-10e, lcn.

ARKANSAS

Company, Well and Location	Initial Production Bbls.	Depth
DALLAS COUNTY—		
Zepp O&G Co., Hillman 1, 20-10-13	*	2869
UNION COUNTY—		
Joe Modisette et al, Webb 1, 3-18-13	*	3620

CLAY COUNTY—S. C. Jeffus, Tr.'s Underwood 1, 4-20-8e, sd 1260 ft.

CLEBURNE COUNTY—Frank S. Craver's Donithan 1, 33-11-9, trying to drill by junk at 2050 ft, td 3740 ft.

CLEVELAND COUNTY—Crum & Stilwell's Bell 1, 10-10s-12w, rigged up and sd.

COLUMBIA COUNTY—Kendall Oil Co.'s Fullenwider & Kitchen 1, ne ne 13-17-22, 8¼ ft hf fresh water, td 814 ft.

CRAWFORD COUNTY — Ozark Nat. Gas Co.'s Hammonds 1, se se 29-10-29, 6⅝ cas 1885 ft, dr 2560 ft shale.

DALLAS COUNTY—Zepp O&G Co.'s Hillman 1, 20-10-13, dry abn td 2869 ft white sand. W. E. Hillman 3, nw ne 20-10-13, lcn. Jno. James, Tr.'s Fordyce Lbr. Co. 1, 11-9s-15w, sd 2520 ft.

DREW COUNTY — Cooperative Dev. Co.'s Ogles 1, ne nw 35-15-5, resetting 10-in cas td 1250 ft.

HOT SPRINGS COUNTY—Starr Oil Co.'s Cunningham 1, 11-5-16, 12½ cas 62 ft sd 1262 ft shale and bldrs.

LINCOLN COUNTY — L. B. Cook, Tr.'s McGehee Pltg. Co. 1, 5-8s-7w, sd 2800 ft.

LITTLE RIVER COUNTY—Geo. Stephens et al's Dierke Lbr. Co. 1, ne nw 29-12s-31w, dk. Fay Roberts Oil Co.'s Russell 1, 25-12-29, lcn.

LOGAN COUNTY—M. W. Greesom's Parks 1, 21-8-24, sd 1309 ft. J. H. Flowers' White 1, 13-5-26, sd 3610 ft.

MILLER COUNTY — W. E. Noel et al's Dickson 1, 11-20-27, sd 1955 ft shale and gmbo. Fitzwater et al's E. L. Beck 1, sw se 33-15-26, 10-in 85 ft sd 2220 ft.

OUACHITA COUNTY—W. H. Copenhaver et al's Berg 1, se se 13-15-17, 10-in 42 ft sd for fuel 2011 ft.

PIKE COUNTY—Henderson et al's Tilyou 1, 26-8-24, ta 2920 ft. Kentucky-Ark. O&G Inc's East 1, 13-9-23, 10-in 288 ft. hf fresh water, wo td 709 ft.

PRAIRIE COUNTY — Powell Creek O&G Co.'s Kloss 1, ne nw 3-4n-6w, partly rigged up and sd.

SCOTT COUNTY — Heavener O&G Co.'s Reser 1, 36-4-26, sd 1536 ft. Waldron O&G Co.'s J. G. White 1, 17-3n-29w, sd 1860 ft (sec. hole).

SEBASTIAN COUNTY—M. W. Greesom's Spears 1, 9-7-29w, sd 1536 ft.

SEVIER COUNTY — Tri-State O&G Co.'s Bank of DeQueen 1, 34-8s-32w, rig.

UNION COUNTY — Southern Prod. Co.'s Wingfield 1, 16-19-15, sd 2608 ft. Lion O. R. Co. et al's Guy P. Hayes A-9, ne ne 4-16-15, elev 96 ft dr 6960 ft salt. Drillers Oil & Dev. Co.'s Pickering 1, 1-17-16, cored 6 ft cap rock and oil sand 2128-34 ft cemtd 6⅝ cas 2128 ft drilled to 2160 ft tested sw, plugged back to 2134 ft. Joe Modisette et al's Webb 1, nw se 6-18-13, 10-in 137 ft dry abn td 3620 ft red shale.

WASHINGTON COUNTY—C. H. Willoughby's Jones 1, 34-16-30, sd 2150 ft.

YELL COUNTY — T. Luckett's Balcon 1, 36-7-12, ta 5640 ft.

MISSISSIPPI

Company, Well and Location	Initial Production Bbls.	Depth
HUMPHREYS COUNTY—		
Danciger O&R Co., Bellgrade Lbr. Co. 1, 29-14n-4w	*	3014
RANKIN COUNTY—		
United Gas Pub. Serv. Co., McLaurin A-1, 8-5-2e	*	3296

CLARKE COUNTY, (Quitman Dist.)—Gulf Ref. Co.'s Long Bell Lbr. Co. A-1, sw sw 10-2n-16e, elev 380.3 ft 15½ cas 105 ft 10-in 956 ft top black shale 2290 ft top chalk 2633 ft top Eutaw 3673 ft 7-in od cas 3685 ft 8-ft sand core 3692-3700 ft showed heavy oil, showed oil

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CHICKASAW COUNTY—Hightower & Golson's Fleming 1, 20-13n-3e, ta 1640 ft.

HUMPHREYS COUNTY — Danciger O&R Co.'s Bellgrade Lbr. Co. 1, nw nw 29-14n-4w, 10-in 659 ft top Midway black shale 2694 ft dry abn 3014 ft black shale.

JASPER COUNTY, (Bay Springs Dist.)—Bay Springs Pet. Inc.'s J. H. Keyes 1, nw ne 21-2n-10e, dr 2518 ft Wilcox rock.

LAMAR COUNTY, (Purvis Dist.)—Stauffer & Kouri, Trs' Bond 1, se ne 18-2n-14w, dk.

LOWNDES COUNTY — Lowndes County O&G Co.'s Carr Est. 1, 34-17-16e, dk.

MONROE COUNTY, (Amory Dist.)—Amory Dev. Co.'s Bourland 1, 2-15-19, ta 3007 ft brown sand. P. J. McAlpine's Cowart 1, 2-12s-19w, 5 3/16 cas 3420 ft rig burned, ta 3793 ft brown sandy lime. Associated Royalties' School Board 1, sw se 16-15-17, ta 60 ft.

NEWTON COUNTY, (Newton Dist.)—Dalton Dev. Co.'s Majure 1, se se 25-6n-11e, 10-in 295 ft sd 940 ft.

NOXUBEE COUNTY, (Macon Dist.) — Thompson O&G Synd.'s Donahue 1, se ne 25-16n-17e, elev 280 ft 12½ cas 20 ft 8¼ cas 1605 ft tested hf alkali water, arr res td 1735 ft. Ames 1, nw nw 24-16-18e, dk pat. Gulf Ref. Co.'s Hanna A-1, nw se 23-5-1e, 9-in 2565 ft base chalk 2934 ft dr 3245 ft gray sandy lime. Atkisson & Dyer's Valentour 1, 18-5-2e, 12½ cas 60 ft sd 1740 ft. United Gas Pub. Serv. Co.'s McLaurin A-1, ne sw 8-5-2e, elev 284 ft 12½ cas 105 ft 9-in 854 ft top Wilcox 1219 ft top chalk 2513 ft base chalk and top red beds 2937 ft dry abn td 3296 ft red beds. Majestic O&G Co.'s Elton Lbr. Co. 1, 10-4n-3e, dk.

SCOTT COUNTY—Culley et al's Owen 1, 2-8n-9e, dk.

WARREN COUNTY, (Vicksburg Dist.) — Eagle Lake O&G Co.'s Kiger 1, sw ne 9-18-2e, sd 2607 ft. United Gas Pub. Serv. Co.'s Tchula Store 1, sw se 33-15n-3e, elev 83.8 ft 15½ cas 184 ft 10-in 855 ft top Claiborne 725 ft top Wilcox 3200 ft sr to bot td 3606 ft sand.

WEBSTER COUNTY — P. J. McAlpine's Henley 1, se nw 15-21-11e, cored gravel, sd 1800 ft.

ALABAMA

MADISON COUNTY — Tennessee Valley O&G Co.'s Fee 4, 1-4s-2e, no report.

SUMTER COUNTY, (Livingston Dist.)—Forked Lightning O&G Co.'s Nixon 1, 30-20-2w, dk.

WASHINGTON COUNTY—Hobson et al's Wilson 1, 27-7-1w, arr res td 925 ft Wilcox. Hobson Bros. 1, 9-8.2w, ta 1450 ft. Oscar Brown's U. S. Land & Cotton 2, 25-3-2w, ta 700 ft.

TENNESSEE

CHESTER COUNTY—Gilmore et al's Scott 1, dr 501 ft (cable tool job).

DECATUR COUNTY—Chester County O&G Co.'s Montgomery 1, sd 2511 ft (2500 ft contract depth).

NORTHERN CALIFORNIA

Company, Well and Location	Initial Production Bbls.	Depth
VENTURA COUNTY—		
Continental's Grubb 1, 23-3-24	700	6750

KERN COUNTY

ANTELOPE PLAINS—Meridian Oil Co.'s No. 1, 11-9-15, dr granite 3907 ft.

BUTTONWILLOW — Graham-Loftus Oil Co.'s Carmel 1, 20-27-22, dr shale 4900 ft. Milham Exploration Co.'s Crites 1, 8-28-23, dr shale 4000 ft.

EL TEJON—Descanso Oil Co.'s No. 1, 31-11-19, rig.

LOST HILLS—All deep development suspended in this field.

McKITTRICK—T. H. Purman's No. 1, 22-29-21, changing to rotary, td 100 ft.

SEMITROPIC — Fullerton Oil Co.'s Core Hole 1, 25-27-23, straightening hole, td 765 ft.

WEED PATCH—Osborn and Colter's Duff 2,15-30-28, pumping 50 bbls 13 gravity oil, td 2006 ft.

SANTA BARBARA COUNTY

GOLETA—General Pet.'s More 3, 22-4-28, re-dr 5450 ft, plugged back from 6912 ft to 5150 ft. Ohio's Oakley 1, 16-4-28, testing formation at 6165 ft in hard gray sand, may deepen. Strickland and Tippett's Duncan 1, 19-4-27, will run small string cas, td 4885 ft.

CARPENTERIA — Pacific Finance Corp.'s Permit 202-1, deepening validation hole from 1800 ft.

SANTA MARIA—Western Gulf's Bradley 1, 5-9-33, dr shale 8158 ft.

VENTURA COUNTY

CONEJO—Triunfo Oil Co.'s No. 1, 24-1-19, sd 2487 ft.

HOPPER CANYON — Bardeen Pet. Co.'s Lankershim 1, 13-4-19, dr shale 2135 ft.

SANTA PAULA — San Pedro-Pt. Fermin Synd.'s Kellerman 1, 13-4-21, dr shale 3725 ft.

SESPE—Merchants Pet. Co.'s Cochran 1, 1-4-20, dr oil sand 1355 ft.

SOUTH MOUNTAIN—H. H. Bell's Lemon 1, 22-3-21, dr shale 1425 ft.

MISCELLANEOUS

FRESNO COUNTY—Kingsburg Exploration Co.'s Muller 1, 30-16-23, rigging rotary.

KINGS COUNTY—Knudsen and Schmidt's Avenal 1, 36-23-17, dr shale 4520 ft. Eagle Oil and Gas Co.'s No. 1, 15-23-20, rigging up rotary, td 275 ft. Irma Investment Co.'s No. 1, 7-23-20, rig. Kettleman Lakeview Oil and Gas Co.'s No. 1A, 20-23-20, made good gas flow, td 1196 ft. Lacal Natural Gas Co.'s No. 1, 32-22-20, rigging rotary. Valley Exploration Co.'s Dudley 1, 12-23-19, co 1287 ft; Veco 7-12, sd 1141 ft; Veco 5-18, lcn.

MERCED COUNTY—San Joaquin Exploration Co.'s No. 36-10-9, lcn.

SAN LUIS OBISPO COUNTY — Central Coast Investment Co.'s No. 1, 13-28-12, dr shale 1425 ft. Indian Dome Oil Co.'s No. 1, 26-31-12, co 3380 ft, will deepen. J. D. Martin's Pismo Dome 2A, 5-31-13, will deepen from

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3000 ft. Kent and McDonald's No. 1, 3-32-22, dr shale 2400 ft. Trav-El Oil Co.'s No. 1, 7-32-22, co 2395 ft.

MONTEREY COUNTY—Pacific Inland Oil Co.'s No. 1A, 19-23-15, dr shale 2022 ft.

MENDOCINO COUNTY—Twin State Oil Co.'s Soblani 1, 14-12-17, sd 7694 ft.

STANISLAUS COUNTY — Bud Hilderbrandt's No. 1, 36-6-7, rigging rotary.

TULARE COUNTY—E. B. Guess' No. 1, 7-21-21, fsh for drill pipe 6200 ft.

SOUTHERN CALIFORNIA

ALHAMBRA—Yellowstone Oil Co.'s Construccio 1, 19-1-12, swabbed water above plug at 1365 ft, td 2014 ft, sd.

CALABASAS—L. W. Rucker's No. 1, 26-1-17, dr shale 700 ft. Simi Oil Co.'s Hearst 1, 18-1-17, dr shale 3900 ft; Hearst 2, 18-1-17, dr shale 200 ft.

FULLERTON — Standard's Bastanchury 1, 21-3-10, plugged to 5884 ft, td 8144 ft, fsh for underreamer.

LYNWOOD—William L. Jones' Graham 1, 31-2-12, sp.

MONTEBELLO—Wardell and Menichini's No. 1, 9-2-11, rig.

NEWPORT—Ajax Pet. Co.'s B. G. 1, 16-6-10, dr shale 6045 ft. Nuoil Co.'s Gessell 2, 29-6-10, will pump at 1975 ft. Orange County Refining Co.'s Newport 5, dr on junk 1225 ft. Superior's Irvine 1, 27-6-10, dr shale 4150 ft.

OCEAN PARK—Hines Pet. Corp.'s Happy Days 1, 8-2-16, sd 7330 ft, could not lower water on bailing test.

PLAYA DEL REY—Cooperative Pet. Corp.'s No. 1, 26-2-15, rigging rotary.

ROSECRANS—Myers and Majestic's Avalon 1, 19-3-13, lcn.

SAN FERNANDO—Mack Oil Co.'s No. 1, 6-2-16, dr hard sand 938 ft.

WILMINGTON—Ranger Pet. Corp.'s Watson 2, 21-4-13, dr shale 3665 ft.

KANSAS

SUMNER COUNTY—Trees Oil Co. & Shell, Springate 1, ne se sw, 6-34-2e, sd 2300 ft. Spencer et al, Porter 1, ne sw, 12-23-4w, 6-inch 3718 ft, dr 4175 ft.

KINGMAN COUNTY — Panhandle Drlg. Co., Wetherall 1, c se nw sw, 20-28-10w, rig.

STAFFORD COUNTY — Rosenthal, Stanolind, Amerada, Gray 1, c ne, 11-34-13w, sd 3560 ft.

HARVEY COUNTY—Liggett et al, Davis 1, c sw se ne, 7-24-1e, sd 1505 ft.

FINNEY COUNTY — National Ref. Co., Wells 1, sw c 13-23-30w, 12-inch 2015 ft, sd 2037 ft.

HARVEY COUNTY—J. P. Flannigan, Sheridan 1, c sw, 32-22-1e, sil. 1. 3606 ft, dr 4092 ft.

BARTON COUNTY—Skelton Oil, Ott 1, c se se, 16-19-14w, 3225-28 ft s. o., dr 3254 ft. Syndicate Oil, Boertz 1, c nw se ne, 13-18-12w, dr 3405 ft.

MORRIS COUNTY—Allender et al, Wycoff 1, c sw se, 5-17-7e, sd 105 ft. Urschel et al, Bersuch 1, c nw se nw, 10-17-7e, td 915 ft, fsh bit.

MORRIS COUNTY—Hankenson et al, Cessnum 1, sw se, 24-17-9e, sd 2625 ft.

OSAGE COUNTY—Riggs-Smith, Wood 1, c se nw, 31-14-15e, 10-inch 1050 ft, sd.

RUSSELL COUNTY—Twin Mounds Oil, Weis 1, c w½ ne nw, 30-13-4w (owd), td 2710 ft, sd.

DICKINSON COUNTY—Severs et al, Livingood 1, ne sw, 13-13-2e, dr 4600 ft.

CLAY COUNTY—Nebraska Oil, Tivier 1, sw c, 19-8-9e, sd 2700 ft.

SHERIDAN COUNTY — Flo et al, Shoemaker 1, se sw sw, 27-27-26w, 6-inch 3745 ft, dr 3815 ft.

WASHINGTON COUNTY — Sincox, Penwell 1, nw se nw, 16-3-3e, sd 1720 ft.

RAWLINS COUNTY—Danciger et al, Unknown 1, sw c, 3-2-35w, 6-inch 3875 ft, hfw 3985 ft, sd.

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Relation of Pipe Line Currents and Soil Resistivity to Corrosion

(*Continued from page 30*)

2. Shepard's apparatus is more useful to discover corrosive soil than the data presented indicate.
3. There is not much pitting in sand, gravel or rocks where it is impossible to measure resistivity with Shepard's apparatus.
4. Clays with extremely low resistance were always wet enough even in summer to obtain good resistivity measurements.
5. Where deep pits were found, soil of low resistance usually could be found at some depth.
6. Deep pits did not always coincide with soil of low resistance, but frequently were found in the next joint.
7. The resistivity of the soil below pipe depth is of some importance. Such observations sometimes discover soils of low resistance containing salts, which are absorbed by the top soil.
8. In soils of high resistance a hard rust scale sometimes forms, which seems to protect the pipe against further corrosion.
9. In soils of low resistance, where pitting is rapid, there is no scale or rust formation. The pipe is wet most of the time, and the corrosion products are white, yellow or green.

Measurement of Pit Depths

Pit depths were measured with a micrometer depth gage having a four inch base and reading to 0.001 inch. Where soil and condition of pipe appeared to be uniform, pits were measured every fifth joint, or about 100 feet apart; otherwise every joint was examined. It was necessary, of course, to measure several pits in order to discover the deepest. The adjustment of the gage was checked frequently.

On the lines coated with enamel a cleaning machine could not be used, so a portion of the coating had to be scraped off with spades, knives, and wire brushes in order to inspect the pipe. The deepest pits were not difficult to find, as they usually occurred where the enamel had failed on the bottom of the pipe. Pits were dug out with a knife, and the depth measured from the original pipe surface. If the nature of the corrosion was such that it was difficult to measure from the pipe surface, or if the pipe was covered with a thick uniform rust scale, no measurements were taken.

The effect of the protective coating in retarding or accelerating the depth of pits is uncertain.

Table 2 shows the number, magnitude, and range of pit depths.

Presentation and Discussion of Resistivity Data

The complete data observed have been plotted on long rolls of profile paper, but, as stated above, have not been reproduced for publication.

Figures 5, 6, 7, 8, 9, 10 show a summary of the relation between the depth of deepest pit and soil resistivity for pipe lines buried 20, 10, 8, 6, 5, and 3 years. The data are also arranged to show frequency of observations and range of pit depths. The length of the horizontal line indicates the number of observations. The solid circle indicates the average pit depth. The resistivity scale is not uniform; and for the sake of clearness, no attempt was made to draw a smooth curve through the average pit depths. Making

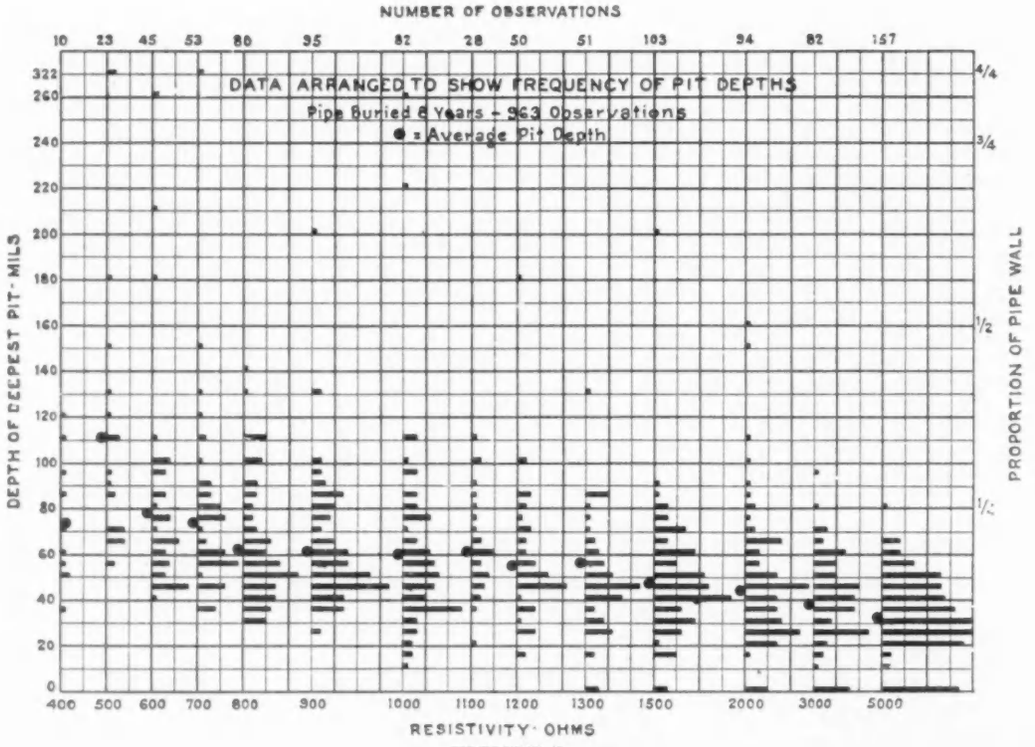
NUMBER OF OBSERVATIONS
10 23 45 53 80 95 82 28 50 51 103 94 82 157
DATA ARRANGED TO SHOW FREQUENCY OF PIT DEPTHS
Pipe Buried 6 Years - 963 Observations
● = Average Pit Depth
DEPTH OF DEEPEST PIT - MILS
322 260 240 220 200 180 160 140 120 100 80 60 40 20 0
PROPORTION OF PIPE WALL
4/4 3/4 1/2 1/4
400 500 600 700 800 900 1000 1100 1200 1300 1500 2000 3000 5000
RESISTIVITY - OHMS

FIGURE 7

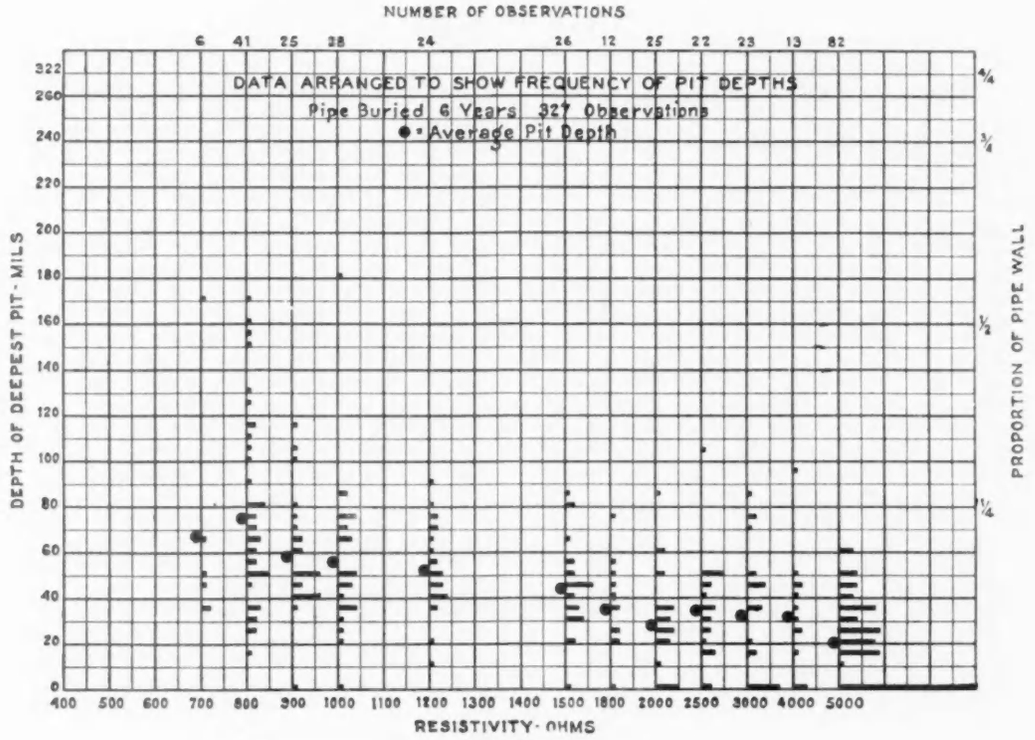
NUMBER OF OBSERVATIONS
6 41 25 28 24 26 12 25 22 23 13 82
DATA ARRANGED TO SHOW FREQUENCY OF PIT DEPTHS
Pipe Buried 6 Years 327 Observations
● = Average Pit Depth
DEPTH OF DEEPEST PIT - MILS
PROPORTION OF PIPE WALL
RESISTIVITY - OHMS

FIGURE 8

the resistive scale uniform increases the size of the plate considerably, and serves no particular purpose for these graphs. A glance at the graphs shows that there is a general trend for depth of pits to decrease with the increase in resistivity. There is a wide range in the depth of pits for the same resistivity. This is due no doubt to the fact that resistivity is only one of many variables affecting pipe corrosion.

In Figure 11 an attempt was made to draw smooth curves through, the average depth of deepest pits plotted against resistivity for each pipe line according to its age. As noted before, there is a general trend for depth of pits to decrease with resistivity, but there is no consistent relationship between the pipe lines according to age. The five and eight year curves cross, and the 10 year curve lies above the 20 year.

In Figure 12 the relationship between the average depth of deepest pits and age of pipe is shown for soils of dif-

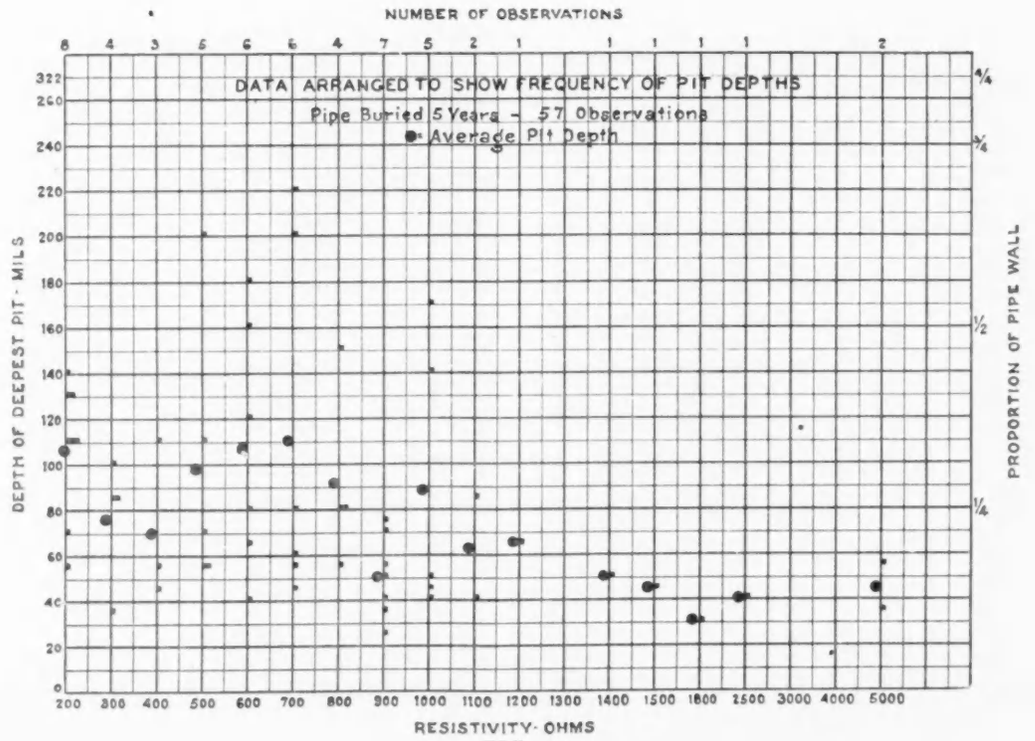
NUMBER OF OBSERVATIONS
8 4 3 5 6 6 4 7 5 2 1 1 1 1 1 2
DATA ARRANGED TO SHOW FREQUENCY OF PIT DEPTHS
Pipe Buried 5 Years - 57 Observations
● = Average Pit Depth
DEPTH OF DEEPEST PIT - MILS
PROPORTION OF PIPE WALL
RESISTIVITY - OHMS

FIGURE 9

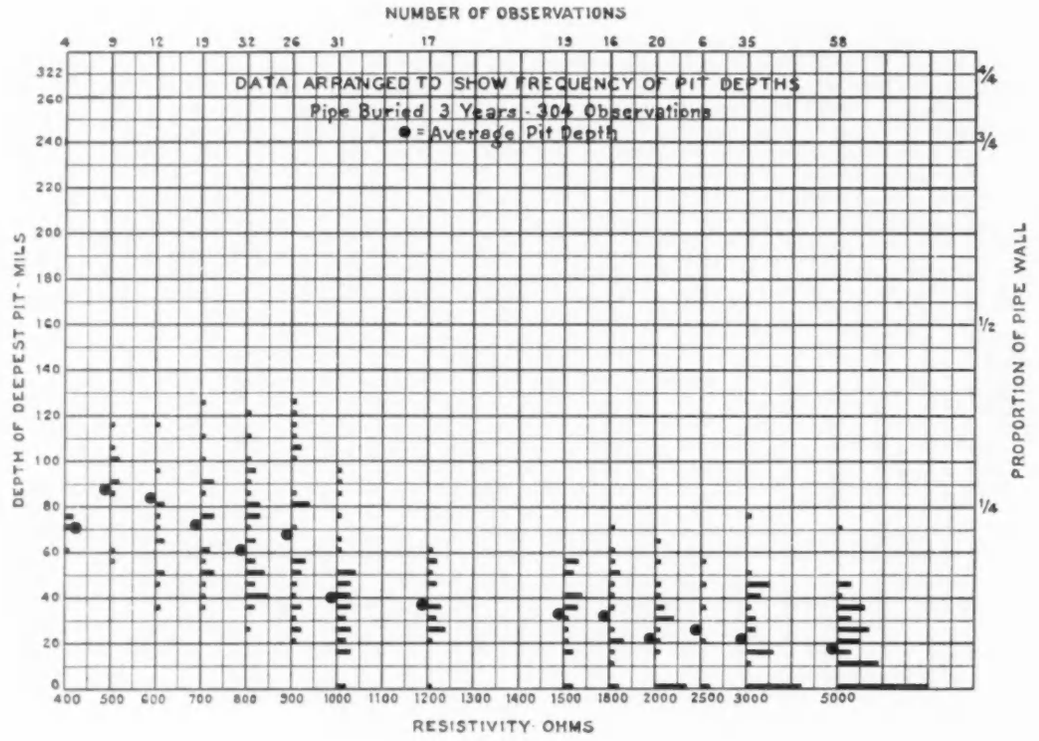
NUMBER OF OBSERVATIONS
4 9 12 19 32 26 31 17 19 16 20 6 35 58
DATA ARRANGED TO SHOW FREQUENCY OF PIT DEPTHS
Pipe Buried 3 Years - 304 Observations
● = Average Pit Depth
DEPTH OF DEEPEST PIT - MILS
PROPORTION OF PIPE WALL
1/4
1/2
3/4
1
RESISTIVITY - OHMS

FIGURE 10

ferent resistivities. The points are pretty well scattered and inconsistent, in places, so that fitting the curves to the points depends pretty much on the judgment of the individual plotting the data. This figure does, however, show quite definitely that the rate of pitting decreases with age, which at the present time is quite a generally accepted theory. The rate seems to be greatest in the first few years.

Conclusions

The data which have been presented indicate many variations and irregularities. This may be due largely to trying to analyze one variable, such as soil resistivity, when several are involved in the determination of soil corrosivity. Errors in observation must also be considered. No definite conclusions can, therefore, be drawn until more data are

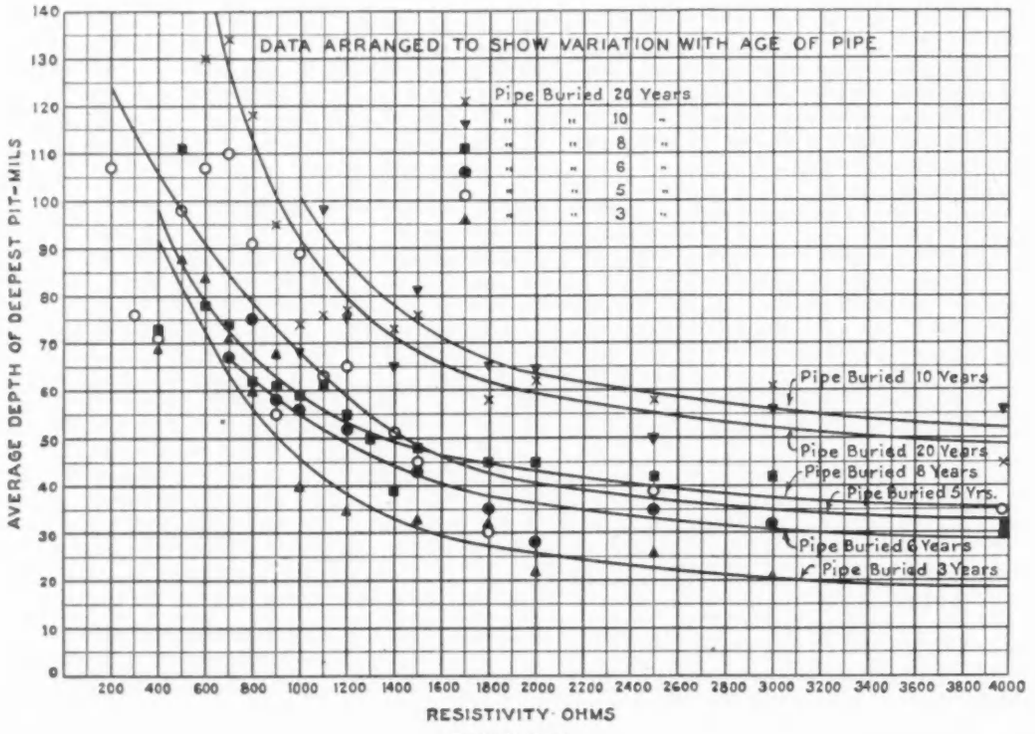
DATA ARRANGED TO SHOW VARIATION WITH AGE OF PIPE
Pipe Buried 20 Years
" " 10 "
" " 8 "
" " 6 "
" " 5 "
" " 3 "
Pipe Buried 10 Years
Pipe Buried 20 Years
Pipe Buried 8 Years
Pipe Buried 5 Yrs.
Pipe Buried 6 Years
Pipe Buried 3 Years
AVERAGE DEPTH OF DEEPEST PIT-MILS
RESISTIVITY - OHMS

FIGURE 11

TABLE 2
Pit Depth Measurements

Name	Age	Miles	No. of Measurements	Maximum Pit	Average Pit	Pits Over 0.100		Pits Under 0.050	
						No.	Per Cent	No.	Per Cent
Creek—Cherokee A	20	11.4	432	0.322	0.074	65	15.0	128	29.6
Creek—Cherokee B	10	4.5	150	0.235	0.065	17	11.3	46	30.6
Kay County	8	24.4	963	0.322	0.053	43	4.5	488	50.7
Scaright—Panova	6	9.3	327	0.180	0.041	15	4.6	210	64.0
Creek—Cherokee C	5	1.0	57	0.220	0.084	14	24.6	14	24.6
Lima—Scaright	3	10.4	301	0.190	0.041	14	4.6	195	65.0

available. However, taking into consideration these limitations, the authors have concluded tentatively that:

1. There is some correlation between long line currents and corrosion. In general, galvanic currents gradually accumulate on pipe lines through soils of high resistance, and in most cases discharge from the lines in soils of low resistance. If current density is relatively high and the discharge is abrupt, deep pitting is usually experienced.

2. There is considerable correlation between depth of pits and resistivity. This is of practical value in soil corrosivity surveys. Soil resistivities of less than 1000 ohms are usually indicative of severe pitting. If due care is used, it may be expected that a large percentage of the corrosive soils will be located.

3. The result of this investigation leads to conclusions that agree closer to Shepard's than those of Gill and Rogers.

Bibliography

[1]K. H. Logan, "Soil Corrosivity Surveys," Proc. First Mid-Year Meeting, Div. of Prod., Amer. Pet. Inst., p. 142, June, 1931.

[2]E. R. Shepard, "Pipe Line Currents and Soil Resistivity as Indicators of Local Corrosive Soil Areas," Research Paper, No. 298, Reprint from Bureau of Standards Journal of Research, vol. 6, April, 1931.

[3]Stanley Gill and W. F. Rogers, "Relation of Long Line Currents to Soil Corrosion," unpublished paper presented at Bureau of Standards soil corrosion conference, 1930.

Marine Oil Plans to Open Wells in Urbana Oil District

El Dorado, Arkansas.—Marine Oil Company plans to open its wells in the Urbana oil district in Union County, which were shut down last July because of low prices, at an early date. The daily production of this company in that area is approximately 1600 barrels. The re-opening of the wells is partly predicated upon sale to Root Refining Company for its El Dorado refinery of 10,000 barrels of Urbana crude.

Wilson and Chapman are ready to start delivery of 10,000 barrels of Urbana crude to the Kettle Creek Refining Company's El Dorado refinery, in tank cars, for experimental purposes. Future shipments after the 10,000-barrel delivery will depend upon the results of experiments with the first delivery.

Delivery has already started by Atlas Pipe Line Company to Lion Oil Refining Company's El Dorado refinery of 20,000 barrels of Stephens, Arkansas, crude bought from Atlantic Oil Producing Company. This 20,000 barrels was bought for experimental purposes and 200,000 barrels of the Stephens oil will be taken by Lion Oil Refining Company if the experiments prove satisfactory.

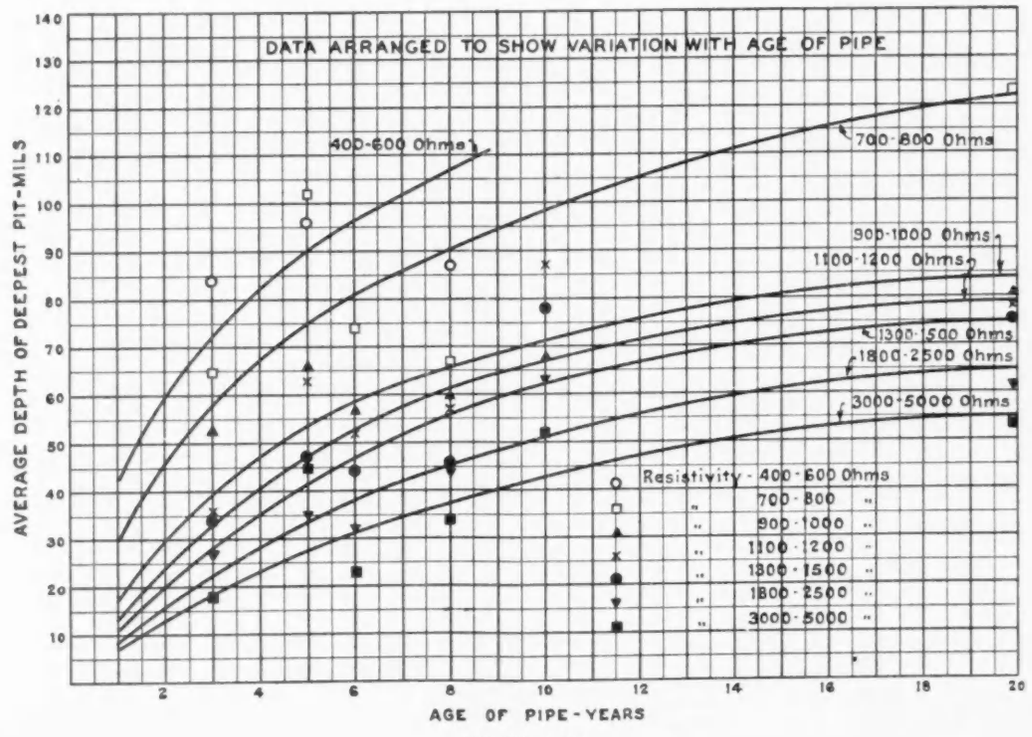

FIGURE 12

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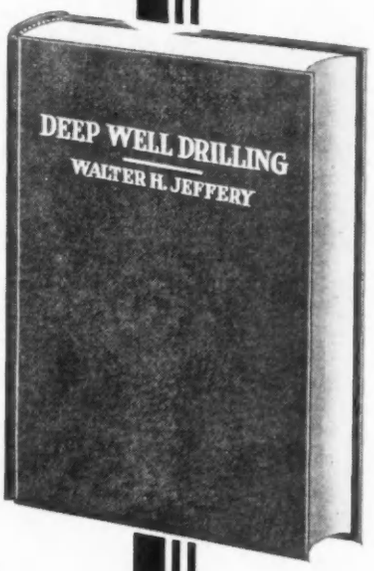

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Re-written and revised to date, and enlarged by the addition of the following New Chapters:

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STRAIGHT HOLE DRILLING AND THE TREATMENT OF CROOKED HOLES.

WATER SUPPLY.

THE GAS-AIR LIFT METHOD OF PRODUCING OIL.

A. P. I. CODES.

Preparatory to writing the new book, the author spent weeks in a first hand study of modern methods of drilling by the rotary system, and of completing wells, controlling high pressures and operating wells in the deep fields of California and Oklahoma.

The third edition contains 816 pages, 150 pages more than the second edition, and 452 illustrations, but the price is the same, $6.00.

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Tubing Head and Blowout Preventer

HERCULES TOOL COMPANY

Hercules Tool Company, Tulsa, has recently placed on the market a tubing head and blow-out preventer.

This head is made with a casing head similar to an ordinary casing head, with two three-inch side outlets and threaded inside at the top, in which is screwed a packing bowl forming a water tight joint. Three slips that encircle the tubing are inserted in the packing bowl for supporting the tubing. On top of the slips rest two special rubber rings with steel rings on top and bottom and are compressed by a packing nut that screws into the top of the packing bowl and forms a seal tight pack around the tubing. This packing can be replaced without lifting the tubing or breaking the well connections.

Whenever it is necessary to run the tools into the well, this can be done by removing the top section or packing bowl from the casing head, and leaving a regular casing head with oil saver top on the well.

This tubing head is tested for 3000 pounds pressure.

The Hercules blow-out preventer is tapered to fit down in the packing bowl in place of the slips. It is split on one side and can instantly be placed around the tubing and lowered down into the packing bowl. A collar on the tubing resting on top of the blow-out preventer compresses it and packs off between the tubing and tubing head.

For further information write the company at P. O. Box 286, Tulsa.

Lubrotite Gate Valve

READING-PRATT & CADY COMPANY, INC.

Reading-Pratt & Cady Company, Inc., Bridgeport, has announced production of a new type gate valve for use in gas and gasoline lines, as well as for general refinery use.

This valve, called the "Lubrotite" by the manufacturers, has an unique duct system for introducing a lubricant seal between the seating surfaces. It is designed to seat tight even though the seating surfaces have been damaged by deposits, abrasion or corrosion. The manufacturers claim the valve will unfailingly hold gasoline and kerosene.

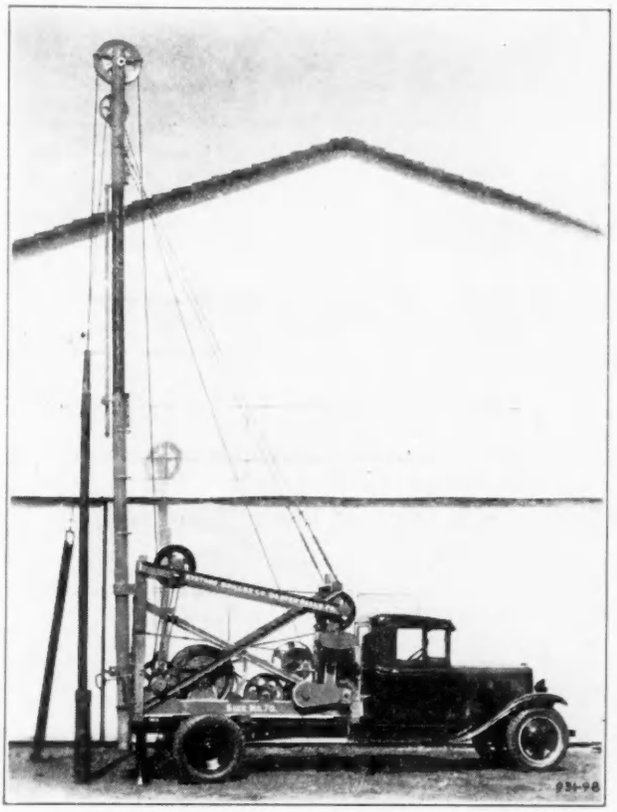
Full details concerning Lubrotite valves may be obtained by writing Reading-Pratt & Cady Company, Inc., Bridgeport, Connecticut.

Light Weight Drilling Outfit

KEYSTONE DRILLING COMPANY

Keystone Drilling Company, Beaver Falls, Pennsylvania, has brought out Keystone No. 70, a light drilling outfit which, excluding the derrick and tools, can be packed in a box approximately 10 feet long, four feet wide and six feet high. In the design of this machine the portability for shipping to foreign countries was particularly stressed.

No. 70 driller has an all-steel, riveted frame, which does not necessitate knocking down when shipping, due to its unusually small size. It has a 16 horsepower, four-cylinder Waukesha engine which drives through two internal expanding clutches on the countershaft, to rope drum and the drilling crank. Ball bearings are used on the drilling crank. All main shafts are 2⅞ inches in diameter, which is oversize for the short span between bearings characteristic of this compactly built machine.



Light Keystone Drilling Machine

The machinery may be used either with manila cordage or wire drilling cable. With the former it has a depth capacity of 300 feet; with the wire line a depth capacity of 600 feet. It has a long, rapid stroke, 30 inches over the well and 60 blows per minute, and is designed to handle 1400 pounds of drilling tools, providing for use of three, four, six, eight or 10-inch bits to ratable depths.

The most rapid and convenient form of mounting is a 1½-ton truck, according to the manufacturers.

The telescoping pipe derrick, which is 30 feet high extended, is a novel feature.

Tyson Roller Bearing Corporation, Massillon, Ohio, has issued an engineering manual devoted to covering the Tyson cageless tapered roller bearings, a loose-leaf manual containing information which has required a long period of research and study. Each page in this manual represents a complete chart on a single series of Tyson cageless tapered roller bearings, including a dimension chart made from an engineering drawing of this particular bearing series, with two important tables.

One table gives capacities in pounds, with the radial and

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Let our nearby Service Man give you full information. Write us to have him call. No obligation.

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thrust capacities at certain revolutions per minute. The second table on each series gives the cone number, and inserted in the manual is a six-page folder picturing and describing briefly the contribution of this company to the anti-friction bearing field.

A copy of this manual is available upon request to the company's Massillon, Ohio, headquarters.

Hagan Corporation, combustion and chemical engineers, 304 Ross Street, Pittsburgh, has recently mailed out Bulletin No. 100, a 12-page illustrated presentation of the Hagan three-stage centrifugal steam separator. Distinctive features and principles of operation of the separator are taken up fully, complete description of design and construction is given, and the need for this type of separator, with detailed operation are covered in this bulletin. The working of the separator is further carried in a pictorial layout.

Another bulletin, No. 101, has been issued by Hagan corporation covering Hagan master regulators, and 16 pages of description and pictures tell the story of this product in a brief manner.

Either of these bulletins may be had by addressing the company at the above address.

Pennsylvania Pump and Compressor Company, Easton, Pennsylvania, has issued two new bulletins, No. 216 which covers the OMS type of sleeve and ball bearing multi-stage centrifugal pumps, and No. 217 which covers the LS type of single stage pumps. Both bulletins are cut for convenient insertion into loose-leaf files. Aside from the fact that both bulletins are fully illustrated for the reader of the detailed descriptions given, engineering drawings showing inside working parts of both types of pumps are carried, with labeled figures for an immediate key to understanding of the designs. Copies of either or both of these bulletins may be had upon request to the Easton office of the company.

General Electric Company's GEA-1146A bulletin, issued in September, says that more and more, modern manufacturers are turning to electric heat as a solution of difficult production problems. In this bulletin 24 pages are devoted to presenting the various types of General Electric furnaces, including the Metallic resistor units, box type, car type, elevator type, conveyor type and pit type; air-draw furnaces, rotary-hearth type, bell type, galvanizing tanks, copper-brazing furnaces, enameling furnaces of the continuous type and the box type, and equipment for generating gas atmospheres. General Electric Company will gladly forward a copy of this bulletin to interested persons.

Enterprise Oil Burner Company has published a new catalog featuring a number of improved types of oil burners. The catalog contains 32 pages, presenting complete illustrations and details of the burners, with specifications and data on fuel consumption and vital heating statistics of interest to those using or specifying burners. It includes burners for application in power plants, where boilers are used.

The catalog includes a new small oil burner known as AAA, adaptable to all types of heating units requiring a limited amount of combustion. A number of accessories manufactured by the firm are also included.

Copies of the catalog may be procured by addressing the company, 2902 19 Street, San Francisco.

Manufacturer and Supply Dealer Notes

▼ ▼ ▼

American Meter Company has acquired Reliance Manufacturing Company and Reliance Iron Works of Alhambra, California, with a new company being formed under the name of Reliance Regulator Corporation to conduct these properties. The management of the former Reliance interests will be retained intact and no changes in the present personnel of the Regulator division are being contemplated. It is announced that Walter M. Thompson, president, and other directors of the former Reliance companies, will be elected to the board of Reliance Regulator Corporation, as well as the additional members who will represent the new interests.

American Meter Company manufactures a complete line of displacement meters, orifice meters, rate volume controllers, as well as gas and meter testing apparatus for the oil and gas industries. The company is now in a position, through Reliance Regulator Corporation, to add to its specialization in gas measurement the problems relating to gas regulation, which, with the growth in semi-high pressure distribution, have become more and more closely related.

Truscon Steel Company has taken over Berger Manufacturing Company's building products division at Canton, Ohio, and will continue to operate it as Berger building products division of Truscon Steel Company, continuing with Berger's present policies and retaining on their staff their present selling organization.

Caterpillar Tractor Company, Peoria, Illinois, in cooperation with Allsteel Products Manufacturing Company, Wichita, Kansas, and Gulf Tractor and Equipment Company, 4102 Polk Avenue, Houston, distributors for both the above companies, have been conducting a school and demonstration on their equipment during the early part of last week, at the warehouses of Gulf Tractor and Equipment Company in Houston.

On the first day, the county farm agents were in session in Houston and were guests at the demonstrations. On the second day, the various municipal and county authorities of South Texas were entertained and on the second night, pipe line engineers, superintendents, and executives as well as production men were entertained at a movie and talkie demonstration showing the various improvements that have been incorporated in tractor and construction equipment. Actual construction operations were shown on the screen as well as operations in drilling and production departments. After the demonstrations, refreshments were served by Gulf Tractor and Equipment Company in the main warehouse.

Those putting on the show were H. R. Loudermilk, vice-president, Allsteel Products Manufacturing Company, Wichita; P. R. Ferrel, district representative, Caterpillar Tractor Company, Dallas, Texas; H. B. Owens, special oil industry representative, Caterpillar Tractor Company from Peoria; Harry Penn, director of extension training, Caterpillar Tractor Company, Peoria, and the following from The Gulf Tractor and Equipment Company of Houston: Roger Barlow, vice-president; Chas. Calhoun, assistant vice-president; J. D. Farrish, attorney; W. H. "Pat" Skeen, Harold Hightower and Ernest Cook, sales representatives.

Wright Manufacturing Company, Bridgeport, Connecticut, announces publication of the new Wright No. 15 condensed catalog, containing each type of Wright hoisting and conveying equipment in brief description. Covered in this catalog are the hand operated chain hoists, trolleys, trolley hoists, traveling cranes, jib cranes and electric hoists. Copies of this catalog are available upon request.

Lucey Products Corporation announces with great regret the death of Mrs. Mabel Penney, wife of J. L. Penney, sales manager of the corporation, at her home in Tulsa, November 22.

Dardelet Threadlock Corporation, New York, has published Bulletin No. 7, which outlines the advantages of self-locking threads in sucker rods. Copies of the bulletin may be obtained by writing Dardelet Threadlock Corporation, 120 Broadway, New York, New York.

Worthington Pump and Machinery Corporation, Harrison, New Jersey, has announced the appointment of J. J. Summersby, Jr., as assistant general sales manager in charge of resale activities. He was formerly in charge of the Holyoke Works sales. He has under his direction as division managers G. B. Cumming, C. F. Oechsle and C. A. Hirschberg. Thomas Cruthers continues as assistant general sales manager in charge of industrials as in the past two years.

California Exposition Date Changed to March 21 to 27

The date of the third annual Oil Equipment and Engineering Exposition has been changed to March 21 to 27, 1932. Like the previous oil shows held in Los Angeles, all annual expositions will be held during the month of March.

The change in date was made to co-operate more closely with the oil equipment manufacturers who have expressed the opinion that it will be more advantageous for both the oil company men who will attend the exposition with the purpose of selecting tools and machinery and for the manufacturers themselves. The previous date of February 1 was felt to be too early and the present indications from a check up of business conditions show that orders are already being received for new oil equipment.

Over 90 per cent of the manufacturers in California have had an increase of business during recent weeks and there is every reason to believe that this will increase gradually and will receive considerable stimulus after the first of the year. It is natural, therefore, that operators will want to view the latest equipment and that the manufacturers will want to take advantage of the opportunity to show it to them at this opportune time.

The third annual Oil Equipment and Engineering Exposition will be held at 131st and Alameda Boulevard, Los Angeles and will offer a complete display of equipment for drilling, production, pipe line, refineries, natural gasoline plants and marketing. Invitations have already been sent to influential men in the foreign oil companies and a larger attendance than usual is expected from the various oil producing countries throughout the world. Admission will as usual be by ticket only but provision has been made for supplying everyone interested in any branch of the oil industry with free complimentary tickets.

"PURTY DURN SLICK!"

An East Texas farmer came up to a well the other day and complained that the driller on an adjoining lease had tunneled under his land and was taking his oil. "Purty durn slick," he said, "the way those fellows turned that well under my lease."

The old gentleman thought they might have done it purposely, not knowing that with many bits it is impossible to drill a straight hole. When they use an APPLEMAN BIT an astonishingly straight hole can be counted on every time. "Purty durn slick," we say!

WATER COURSES lead direct to cutting edge, producing maximum cooling effect.

SELF SHARPENING EDGES due to concavely formed blades.

SIDE WALL CUTTING: Cuts side wall as it drills. Accomplishes full round hole and well prepared side wall. Holds gauge longer. Reaming rarely necessary.

STRAIGHT HOLE: Less weight is needed to feed the bit. Drillers who use APPLEMANS for the first time are astounded at how straight a hole they can drill.

WRITE FOR COMPLETE INFORMATION

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BEAUMONT, TEXAS

Squeaks from the Bull Wheel

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"We have a mummy in this museum," said the guide, "that has had some wheat in his hand since the days of the Pharaohs."

"Well," rejoined Mr. Jones, "I'd advise him not to hold on any longer. Wheat'll never be any higher."

A deputy sheriff was sent to take an inventory of the property in a house. When he did not return for three hours, the sheriff went after him, and found him asleep on a lounge in the living room of the house. He had made a brave effort with his inventory, however: he had written down, "Living room—1 table, 1 sideboard, 1 full bottle whisky." Then the "full" had been crossed out, and "half full" substituted. Then this was overlined, and "empty" put in its place. At the bottom of the page, in wobbly writing was written: "1 revolving carpet."

"I wish our bank could get on its feet enough to stop sending back our checks marked 'No Funds'," said the bride to her husband. "A bank that hasn't got enough money on hand to pay a $4.27 check ought to be merged and put on a sound basis."

Yes, she assured him that she was passionately fond of literature.

"Then you must have read Scott," he said.

"I think he's just delightful," she exclaimed.

"Isn't the 'Lady of the Lake' exquisite?" he asked.

"Perfectly lovely!" was her ardent reply. "I have read it a dozen times!"

"And 'Marmion' and 'Peveril of the Peak?'"

"I just dote on both of them," she said.

"And Scott's Emulsion'?" he asked getting somewhat suspicious.

"I think," she said, "that it's the best thing Scott ever wrote!"

Cheer up.
You have two chances—
One of getting the germ
And one of not.
And if you get the germ
You have two chances—
One of getting the disease
And one of not.
And if you get the disease
You have two chances—
One of dying
And one of not.
And if you die—
Well, you still have two chances.—

Judge—Will you tell me how you came to break into the strong room of the bank?

Accused—I can't; that's a professional secret.

Cora: Would you marry a man for his money?

Dora: Not exactly. But I'd want my husband to have a lovely disposition, and if he didn't have money he'd very likely be worried and ill-natured.

Holler Rock Junction, Tenn.

"Dear Mr. Editor:

"There seems to be so much talk about our so-called Republican prosperity. I believe 'tis my duty to write my views on the same and help analyze the situation as far as possible so's we can make up our mind's we had auto change our ways of living and so forth.

"I have taken my own case for instance. I see my mistakes, and many others have acted likewise. I bought a Ford instead of a farm and it is worn out, but the farm I figured on is still O. K. I invested in a radio instead of a cow, and the radio gives static instead of milk.

"I am feeding five nice hounds which answer to the name of Red, Red Wing, Slobber, Jake and Bayrum, instead of five pigs. I had our piano tuned instead of the well cleaned out. I spent all my cash in 1928 and used my credit in 1929 and traded my future wages on installments in 1930 so hard times caught me in bad shape last fall.

"If I had spent my last ten dollars for flour and meat instead of gas and oil, I would have been O. K. I built a nice garage last year instead of covering my barn and I loafed in a mountain two weeks instead of being in the pasture fixin' it so's my cow won't get out, but she is dry and mortgaged to boot for two blankets my wife bought from an agent instead of paying the preacher.

"I'm on a cash basis now, but ain't got no cash. I am tied to the end of my rope and the man I am working for is busted on account of nobody wouldn't pay him and his cotton won't sell 'cause nobody won't buy no cotton clothes; all the gals wear slick silky underwear right here in our cotton patches. I had $4 saved up for a rainy day, it turned dry and I spent the $4 for two inner tubes.

"I tried hard to make both ends meet with a turnip patch but when I got turnips ready to sell, everybody else was selling turnips for nothing and the market was glutted. I am worried plum to the bone and my wife's kinfolks are coming over next Tuesday to spend two weeks.

"Write or phone if you hear of any relief from the government coming down my way, and I am willing to be either a Democrat or a Republican for a few weeks if that will help out any."

—Mike Clarke, R.F.D., in Texas Pioneer.

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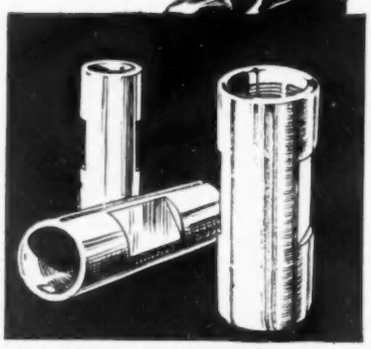

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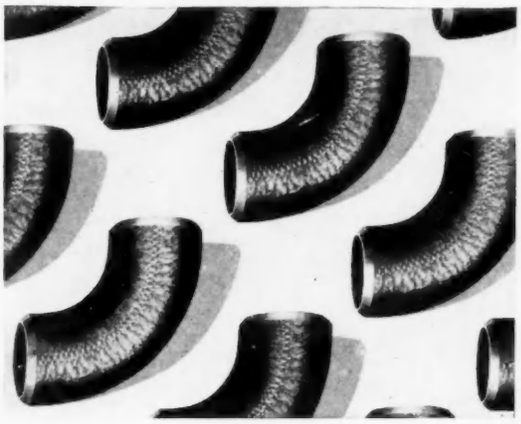

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